

STATE OF INDIANA

INDIANA UTILITY REGULATORY COMMISSION

PETITION OF SOUTHERN INDIANA GAS AND ELECTRIC)
COMPANY d/b/a VECTREN ENERGY DELIVERY OF)
INDIANA, INC. ("VECTREN SOUTH - ELECTRIC") FOR (1))
AUTHORITY TO INCREASE ITS RATES AND CHARGES)
FOR ELECTRIC UTILITY SERVICE; (2) APPROVAL OF)
NEW SCHEDULES OF RATES AND CHARGES)
APPLICABLE THERETO; (3) INCLUSION IN ITS BASE)
RATES OF COSTS ASSOCIATED WITH CERTAIN)
PREVIOUSLY APPROVED QUALIFIED POLLUTION)
CONTROL PROPERTY PROJECTS; (4) AUTHORITY TO)
IMPLEMENT A RATE ADJUSTMENT MECHANISM TO)
TRACK INCREMENTAL CHANGES IN CERTAIN COSTS)
AND REVENUES RELATING TO ITS GENERATING)
FACILITIES; (5) AUTHORITY TO IMPLEMENT A RATE)
ADJUSTMENT MECHANISM TO TRACK INCREMENTAL)
CHANGES IN NON-FUEL RELATED MIDWEST)
INDEPENDENT TRANSMISSION SYSTEM OPERATOR,)
INC. ("MISO") CHARGES AND PETITIONER'S)
TRANSMISSION REVENUE REQUIREMENT; (6))
APPROVAL AS AN ALTERNATIVE REGULATORY PLAN)
PURSUANT TO IND. CODE § 8-1-2.5-6 OF A RETURN ON)
EQUITY TEST TO BE USED IN LIEU OF THE STATUTORY)
NET OPERATING INCOME TEST IN ITS FUEL)
ADJUSTMENT CHARGE PROCEEDINGS; (7) APPROVAL)
OF REVISED DEPRECIATION ACCRUAL RATES; (8))
APPROVAL OF THE CLASSIFICATION OF PETITIONER'S)
FACILITIES AS TRANSMISSION OR DISTRIBUTION IN)
ACCORDANCE WITH THE FEDERAL ENERGY)
REGULATORY COMMISSION'S SEVEN FACTOR TEST;)
AND (9) APPROVAL OF VARIOUS CHANGES TO ITS)
TARIFF FOR ELECTRIC SERVICE INCLUDING NEW)
INTERRUPTIBLE AND ECONOMIC DEVELOPMENT)
RIDERS.)
)

FILED

SEP 01 2006

INDIANA UTILITY
REGULATORY COMMISSION

43111

CAUSE NO. _____

Prepared Direct Testimony and Exhibits
Of
SOUTHERN INDIANA GAS AND ELECTRIC COMPANY
D/B/A VECTREN ENERGY DELIVERY OF INDIANA, INC.
(VECTREN SOUTH - ELECTRIC)

Book 2 of 4

WS Doty, EJ Schach, RG Jochum, MW Chambliss

September 1, 2006

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**SOUTHERN INDIANA GAS AND ELECTRIC COMPANY
d/b/a VECTREN ENERGY DELIVERY OF INDIANA, INC.
(VECTREN SOUTH – ELECTRIC)**

43111
IURC CAUSE NO. _____

**DIRECT TESTIMONY
OF
WILLIAM S. DOTY
PRESIDENT**

ON

**TRANSMISSION AND DISTRIBUTION INSPECTION AND MAINTENANCE
PROGRAMS, MIDWEST ISO COST RECOVERY ADJUSTMENT, AND THE AGING
WORKFORCE**

SPONSORING PETITIONER'S EXHIBITS WSD-1 THROUGH WSD-16

Direct Testimony of William S. Doty

Introduction

Q. Please state your name, business address, and occupation.

A. My name is William S. Doty. My business address is One Vectren Square, Evansville, Indiana 47708. I am the President of Southern Indiana Gas and Electric Company d/b/a Vectren Energy Delivery of Indiana, Inc. ("Vectren South"). I also am the Executive Vice President of Utility Operations for Vectren Corporation ("Vectren"), which is Vectren South's ultimate corporate parent.

Q. What are your duties in your present position?

A. As President, I have overall responsibility for the operation of Vectren South facilities and the provision of utility service for our customers.

Q. How long have you been employed by Vectren South?

A. I have been employed by Vectren South since the March 31, 2000 merger of Indiana Energy, Inc. and SIGCORP, Inc. into Vectren. My career in the utility industry began in 1993 with Southern Indiana Gas and Electric Company ("SIGECO" or "Vectren South"), which was the principal subsidiary of SIGCORP, Inc. prior to the Vectren merger. Since that time, and prior to my current role, I held a variety of positions including Director of Gas Operations, Vice President of Energy Delivery, and Senior Vice President of Customer Relationship Management. Prior to joining SIGECO, I was employed for 16 years with ALCOA and 2 years with Ford Motor Company. At those companies, I had various responsibilities in operation management, maintenance, engineering, and product development.

Q. What is your educational background?

A. I received a Bachelor of Science degree in mechanical engineering from Rensselaer Polytechnic Institute in 1972 and a master's degree in civil engineering and urban planning from the University of Michigan in 1976. I am a registered professional engineer in Pennsylvania.

1 **Q. Have you previously testified before this Commission?**

2 A. Yes. In Cause Nos. 42027/42032, I provided testimony regarding Vectren
3 South's proposed transfer of operational control of its electric transmission
4 facilities to the Midwest Independent System Operator. I also provided testimony
5 in Vectren North's rate case (Cause No. 42598) regarding plant in service and
6 certain operational issues. Vectren North is also a subsidiary of Vectren
7 Corporation.
8

9 **Q. What is the purpose of your testimony?**

10 A. My testimony addresses the broad array of operational challenges which Vectren
11 South currently faces and the plans and programs we have designed to meet
12 those challenges. I describe the basis underlying Vectren South's proposed
13 system wide transmission and distribution inspection and maintenance program.
14 This program, based on careful planning and review of the current condition of
15 our system, will result in improved operations resulting in greater reliability and
16 service quality. This is consistent with Indiana's Strategic Energy Plan (2006)
17 which states: "The State will continue to work with the Midwest Independent
18 System Operator (MISO), other transmission organizations, and energy providers
19 to augment energy transportation systems as appropriate p.11" .It is also
20 consistent with the recent actions of the Federal Energy Regulatory Commission
21 ("FERC") advancing the policy to bolster our nation's transmission systems and
22 to generally improve system reliability.
23

24 My testimony addresses Vectren South's request for Commission approval of our
25 requested Midwest ISO cost recovery adjustment ("MCRA"). I provide historical
26 background on the Midwest Independent System Operators ("MISO") approval in
27 Indiana and describe the regulatory treatment of MISO costs and deferrals thus
28 far ordered by the Commission. I describe the type of MISO costs, how they
29 have been treated by Vectren South, and their proposed recovery.
30

31 I describe in particular the challenges Vectren South will face as the highly
32 qualified and experienced baby boom segment of our work force reach

retirement over the next decade. I describe our efforts for dealing with this aging workforce phenomenon and the resulting costs.

MIDWEST ISO COST DEFERRALS AND SYSTEM OPERATIONS STAFFING

Midwest ISO ("MISO") Cost Deferrals

Q. What is the history of Vectren South's participation in MISO?

A. MISO was created pursuant to the Agreement of Transmission Facilities Owners To Organize The Midwest Independent Transmission System Operator, Inc. ("MISO Agreement"). Vectren South joined MISO as a Transmission Owning member on February 26, 1999. MISO was created:

a. To provide non-discriminatory open access transmission service, over the transmission system under functional control by MISO, to transmission customers including transmission owners who lawfully request such service pursuant to FERC tariffs;

b. To receive funds associated with transmission service from transmission customers solely as an agent for the transmission owners or their designees and to distribute such funds to such transmission owners or their designees;

c. To be responsible for regional system security, in accordance with the Midwest ISO agreement.

On December 20, 1999, the FERC issued its Order No. 2000 requiring those electric public utilities subject to its jurisdiction to join an operational FERC approved Regional Transmission Organization ("RTO") by December 2001. On December 20, 2001 the FERC issued an Order in FERC Docket Nos. RT01-87-000, RT01-87-001, ER02-106-000, and ER02-108-000 finding that MISO satisfied the criteria required under FERC Order No. 2000 for RTO status and granting RTO status to the Midwest ISO.

On December 17, 2001, this Commission issued its Order in Cause No. 42027 ("Transfer Order") approving the transfer to MISO of functional control of

operation of the applicable transmission facilities of the Joint Indiana Petitioning Utilities including Vectren South, as required by the MISO Agreement.

Q. What were the regulatory policy goals underlying the formation of RTOs like MISO?

A. The Commission aptly described the goals and benefits in its Transfer Order as follows:

There is a growing recognition throughout the electric industry that transmission policy is central to the efficiency, reliability and competitiveness of wholesale power markets. Transmission access, pricing, operations, planning and construction all require attention. Particularly relevant to the present case is growing recognition that power supply markets are regional markets. As power supply markets are regional, transmission policy must also be regional.

Over the past five years, it has become increasingly apparent that the institution necessary to assure regional transmission service is the regional transmission organization. Most prominently, the FERC, beginning in late 1999, issued a series of orders that strongly encouraged electric public utilities subject to its jurisdiction to join an operational FERC approved RTO by December 15, 2001.

The Commission [i.e., the IURC] shares the central goal set forth in these orders: the evolution of efficient, effectively competitive regional power supply markets, and the development of transmission practices necessary to assure that evolution. We expect Indiana utilities to act consistently with that goal. December 17, 2001 Order, p. 7. (Bracketed material added.)

The Commission has reviewed the testimony in this matter, and finds that Indiana electric customers should receive directly or indirectly substantial and material benefits from the Joint

Petitioners participating as transmission owner members in the MISO. The benefits, as set forth in this matter, include: reliability, enhancement of wholesale generation competition and reduction in costs. December 17, 2001 Order, p. 22.

Q. Did the Commission subsequently authorize accounting and ratemaking treatment for certain costs incurred as a result of taking transmission service under MISO's open access transmission tariff ("OATT")?

A. Yes. The Commission issued an Order in consolidated Cause Nos. 42257 and 42266 on December 11, 2002 (the "Day One Order"). That Order reviewed and approved a Settlement Agreement between the Joint Petitioners and the Indiana Office of the Utility Consumer Counselor ("OUCC").

Q. What are the substantive terms of the Day One Order and the Settlement Agreement?

A. The Settlement Agreement provided and the Day One Order approved Vectren South's request for accounting authority to defer MISO Administrative Adder Costs related to MISO's implementation of the Day One market for subsequent recovery from Indiana electric retail customers in future base retail electric rate cases. Such Administrative costs result from Vectren South taking transmission service under the Midwest ISO OATT (or any successor OATT). As part of the Settlement Agreement, Vectren South agreed that the MISO Administrative Adder cost deferral would not accrue carrying costs. The agreed and ordered period for amortized recovery of deferred MISO Day One Administrative Adder Costs is four years.

Q. What was the duration of authority to defer the MISO Day One Costs?

A. Authority to defer was for the period prior to and ending December 31, 2006; however, the Settlement Agreement provided the deferral could be extended by a future Commission Order either extending the duration of the deferral or if an Order during the deferral period allowed for the tracking or more immediate recovery of costs such as the MISO Day One Costs then the new Order's regulatory framework for cost recovery may be used.

1
2 **Q. During the effective period of the Settlement Agreement deferral, has the**
3 **Commission issued a new regulatory order extending the deferral of MISO**
4 **Day One Costs?**

5 A. Yes. The Commission's Order in Cause No. 42685 issued June 1, 2005
6 provided such relief (the "Day Two Order"). The June 1, 2005 Order essentially
7 divided all MISO credits and charges into two categories, those that "should be
8 included in the cost of fuel for purposes of our review and subsequent FAC
9 proceedings" and those that "should be deferred for consideration and review as
10 part of IPL, Vectren's, and NISPCO's next base rate case proceedings." (Day
11 Two Order, pp. 37-39). The MISO Day One administrative costs fall into the
12 category of those non-fuel costs deferred until Vectren's next base rate case
13 proceeding under the Day Two Order. Therefore, Vectren South will continue the
14 deferral of the MISO Day One Costs past December 31, 2006 in reliance upon
15 the terms of the Day One and Day Two Orders.
16

17 **Q. Briefly, what is the historical background behind the Commission's Day**
18 **Two Order?**

19 A. The central event was the initiation of MISO Energy Market Day-2. FERC
20 ordered MISO to develop and implement Real-Time and Day-Ahead electronic
21 energy markets within the Midwest ISO region for Day-2. Accordingly, on March
22 31, 2004, MISO filed its proposed Open Access Transmission and Energy
23 Markets Tariff ("TEMT") with the FERC. The TEMT set forth rates, charges,
24 terms, and conditions for the implementation of a MISO centralized security-
25 constrained economic dispatch platform supported Day-Ahead and Real-Time
26 energy market design.
27
28

29 **Q. What MISO energy market Day-2 charges and credits assigned to Vectren**
30 **South and attributable to its retail customers did the Day Two Order**
31 **indicate "should be included in the cost of fuel for purposes of our review**
32 **in subsequent FAC proceedings?"**
33

1 A. The MISO Day-2 charges and credits to be included in the cost of fuel for
2 purposes of FAC proceedings is listed as follows in the Day Two Order:

- 3 a. FTR congestion costs;
- 4 b. FTR congestion credits;
- 5 c. FTR auction settlements;
- 6 d. Virtual Bids and Offers in the Day-Ahead Market which are used
7 for hedging jurisdictional load;
- 8 e. Day-Ahead Recovery of Unit Commitment Costs;
- 9 f. Excess Congestion Charge Fund Credit;
- 10 g. Real-Time Marginal Losses Surplus Credit;
- 11 h. RAC Recovery of Unit Commitment Costs;
- 12 i. Marginal Losses Surplus Credit;
- 13 j. Inadvertent Energy Charge or Credit;
- 14 k. Uninstructed Deviation Penalties (for an initial specified time
15 period); and,
- 16 l. Revenue from Uninstructed Deviation Penalties. Id. p. 37.

17
18 The other Day Two charges and credits Vectren South requested be recovered
19 through a new MISO tracker were instead authorized to be deferred, the
20 Commission stating: "Accordingly, we find that...Vectren['s]...MISO Costs other
21 than fuel cost properly recoverable as part of an FAC proceeding as outlined
22 above, should be deferred for consideration and review in the context of a
23 subsequent base rate case in which MISO costs can be evaluated and offset with
24 other costs, revenues and earnings." Id. p. 39. Also see ordering paragraph 5,
25 p. 44.

26
27 **Q. After inclusion of those listed MISO Day-2 costs in the cost of fuel for FAC**
28 **proceedings, what are the remaining MISO Day-2 costs to be deferred**
29 **under the Day Two order?**

30 A. Other than fuel costs properly recoverable as part of an FAC proceeding, the
31 MISO Day-2 costs to be deferred for review and recovery in Vectren South's
32 subsequent base rate proceeding are as follows:

33

- 1 1. Costs billed to Vectren by MISO under Schedule 10, or a successor
2 provision of the MISO OATT, or successor Tariff for the MISO and cost
3 billed under Schedule 10 FERC;
- 4 2. Costs billed to Vectren by MISO under Schedule 16, or a successor
5 provision of the Midwest OATT, or any successor Tariff for the MISO;
- 6 3. Costs billed to Vectren by MISO under Schedule 17 or a successor
7 provision of the Midwest OATT, or any successor Tariff for MISO;
- 8 4. Costs that are not otherwise recovered by MISO and socialized under all
9 market participants including Vectren (uplift costs); and
- 10 5. Internal costs incurred by Vectren which have not been reimbursed by
11 MISO to be able to interface with MISO (see Jochum testimony in Cause
12 42685, pp. 20-21).

13
14 **Q. Prior to the issuance of the Day Two Order, had the Commission already**
15 **granted one Indiana utility the authority to track non-FAC recoverable MISO**
16 **costs on an ongoing basis?**

17 A. Yes. The Commission approved PSI's MISO tracker, Rider No. 68, in the context
18 of its base retail rate case in Cause No. 42359, over a year before the Day Two
19 Order.
20

21 **Q. What Day One costs has Vectren South deferred for recovery in this rate**
22 **case?**

23 A. The deferred Day One costs as of March 31, 2006 plus costs expected to be
24 deferred through March 31, 2007 total \$6,006,776. Using the agreed upon 4
25 year amortization period, these costs should be recovered through a pro forma
26 adjustment of \$1,501,694 as reflected on Petitioner's Exhibit MSH-2 Adjustment
27 A48.
28

29 **Q. What Day Two deferred costs does Vectren South seek to recover in this**
30 **case?**

31 A. The deferred Day Two costs total as of March 31, 2006 total \$5,218,293. We
32 estimate that the additional costs to be deferred through March 31, 2007 total
33 \$5,420,266. In addition, Vectren South has accrued \$3,409,909 in Revenue

1 Sufficiency Guarantee costs between April 1, 2005 and December 9, 2005 per
2 Cause No. 42962. In total, Vectren South seeks to recover the total amount of
3 \$14,048,468 over a three year period. Petitioner's Exhibit MSH-2 Adjustment
4 A14 reflects this treatment and details the components of the costs.

5
6 **Q. Is the recovery of these Day Two costs reasonable and necessary?**

7 A. Yes. These costs have been deferred in conformity with the Commission Orders
8 I have described. All of these are prudent costs incurred in our participation in
9 MISO and have been required to provide adequate and reasonable continuing
10 service to our customers.

11
12
13 **Vectren South's MISO Cost Recovery Rider ("MCRA")**

14
15 **Q. Do you support the Commission's approval of Vectren's requested MCRA?**

16 A. Yes, I do. After recovering the deferred Day One and Day Two costs in this
17 proceeding, the MCRA provides the method for recovery of the non-fuel costs to
18 participate in MISO and its energy markets on an ongoing basis.

19
20 **Q. Please explain why you believe that the commission should approve**
21 **Vectren South's requested MCRA.**

22 A. The MCRA should be approved for many reasons. First and foremost, the
23 charges and credits to be recovered under the MCRA have been federally
24 mandated by FERC and are a necessary cost as we continue to provide safe,
25 adequate, and reliable service to our customers. Vectren South pays these costs
26 subject to the terms of the MISO TEMT. Second, these costs are variable in
27 amount from year to year and quarter to quarter. The level of these charges and
28 credits varies with fluctuations in market demand, pricing, weather, and economic
29 conditions. These charges and credits are also variable as to timing. Moreover,
30 credits and charges may arise through refunds ordered by the FERC or
31 additional charges ordered by the FERC. It is also important to recognize that
32 these credits and charges are substantial in the aggregate and in individual
33 amounts. FERC rulemakings, litigated proceedings, refunds, additional charges,

actions of the MISO, new generation, loss of generation, variation in loads and customer levels within MISO's footprint, and the normal vagaries of weather and economic and business cycles all serve to make these credits and charges outside Vectren's control and variable in nature. The ability to timely recover these credits and charges on an ongoing basis is important to Vectren's financial well being and important to the accuracy of price signals sent to our customers. In authorizing PSI Energy's ability to track these costs, the Commission has already recognized that the MISO costs and revenues are "(1) the result of decisions by the FERC; (2) variable in amount from year to year; (3) variable as to timing; (4) substantial in individual and aggregate amounts; and (5) outside the control of PSI" In Re: PSI Energy, Inc., IURC Cause No. 42359. May 18, 2004, p. 120.

The incurrence of these credits and charges by Vectren South as a result of taking transmission service under MISO as mandated to by FERC to serve our retail electric customers are just, reasonable, necessary, in the public interest, and have not been offset by any related savings or incremental revenues.

Q. Does the fact that these MISO credits and charges are beyond Vectren South's control mean that they are beyond Vectren South's scrutiny?

A. No. We closely scrutinize our MISO invoices in an effort to be certain that Vectren South and in turn, its retail customers, are not overcharged by MISO through error or unreasonable operations. Vectren South shadows the multiple Settlement and Resettlement Statements received for every operating day. This involves recalculating many of the hourly charges and filing formal disputes when the charges are not supported by published rules for the market.

Similarly, representatives of Vectren South have, since the beginning of MISO and continuing today, actively participated in the MISO Stakeholder process. This includes the ongoing, periodic meetings of various MISO committees such as Advisory Committee, Market Subcommittee, Revenue Sufficiency Guarantee Working Group, Market Settlements Working Group, Credit Practices Working Group, Modeling Committees, and various others. This effort has resulted in

development of market rules which encourage MISO to reduce costs, operate efficiently, and provide timely and clear billing information.

Q. Why does Vectren South include the flow through of uninstructed deviation penalties in the MCRA?

A. Uninstructed Deviation Penalty costs can be an unavoidable legitimate cost of service whose recovery symmetrically balances the flow through of revenue from Uninstructed Deviation Penalties within the FAC.

Uninstructed Deviation Penalties occur when a utility has to deviate, because of unforeseen circumstances, from its MISO commitment to provide generation or supply energy. Some of those unforeseen circumstances are difficult or impossible to predict using the exercise of reasonable judgment and Good Utility Operating Practice based on the information that is then available. For example, if a unit goes down because of mechanical failure, an Uninstructed Deviation may result. Similarly, if a large industrial customer on our system suddenly turns on a smelting unit or engages in some other intense and immediate use of electricity, the resulting demand can result in an Uninstructed Deviation Penalty. Simply put, there are instances where a utility may have to deviate from its generation commitment to MISO in order to keep the lights on and meet the demands of native load customers. When that occurs as a result of unforeseen or mitigating circumstances and the utility's actions withstand the scrutiny of Good Utility Operating Practices, the costs should be recovered. The June 1, 2005 Order allowed for the inclusion in the cost of fuel of Uninstructed Deviation Penalties for a one year period. However, the June 1, 2005 Order left open the possibility that uninstructed deviation penalties may be recovered after the one year period, "...unless it is demonstrated the utility failed to use Good Utility Operating Practice." Id. p. 42. Whether recovered in the MCRA, or through the FAC, there should be an opportunity for Vectren South to recover Uninstructed Deviation Penalties which arose despite the exercise of reasonable judgment and were not the result of failing to use Good Utility Operating Practice based on information then available. Vectren South certainly contemplates that on any occasion when it proposed to recover such costs it would demonstrate to the

Commission that the costs were indeed incurred under circumstances where Vectren South followed Good Utility Operating Practices.

Transmission System Operations Staffing

Q. What are the activities of Vectren South's Transmission System Operators?

A. While some functions, such as generation dispatch, have been transferred to the Midwest ISO (MISO) due to Vectren's membership as a Transmission Owner (TO) in an approved Regional Transmission Operator (RTO), there are many functions and an increasing work load because the transmission system operators serve as control area operator and balancing authority for this area. The operators oversee the transmission function to ensure that generation and load are balanced at all times and that frequency and voltage levels are within system specifications. They oversee the accumulation of critical load and generation data from the Energy Management System, oversee transmission scheduling and MISO's use of the state estimator for determining which transactions may be completed, and manage Vectren South's transmission maintenance program so that scheduled outages are coordinated with MISO. Finally, one of the most significant functions of a control area operator, line switching, remains the responsibility of the TO.

Q. Is an additional employee needed in the area of Transmission System Operations?

A. Yes. Vectren South needs the assistance of one additional full time transmission operator. We currently employ six transmission operators, five are shift workers and one is a permanent day person responsible for developing training materials, overseeing compliance with NERC requirements and covering for the shift workers. Vectren South will hire one additional System Operator in the Transmission System Operations. While MISO has assumed some of the operating functions, it is clear that all the new market functions now available as RTOs develop and mature require additional expertise and employees to address them effectively. In addition, the newly appointed Electric Reliability Organization (ERO), formerly known as North American Electric Reliability

1 Council (NERC), will have newly imposed training, operating, and reporting
2 standards that are more stringent than those now required which requires
3 additional resources in this area. Regardless of more stringent future training
4 requirements, current NERC system operator certification requires our
5 transmission operators have 200 hours of continuing education every three years
6 to retain their certification. Our transmission system operations staff is always
7 challenged to keep pace with the complex and changing environment in which
8 they must operate and is not in a position to take on the new requirements
9 without additional staffing.

10
11 **Q. What benefit will this position bring to Vectren South and its customers?**

12 A. Transmission system operations is completely committed to "keeping the lights
13 on" relative to matching generation and load and complying with RTO and NERC
14 operating requirements on a real time basis. This focus on reliability is the
15 operator's daily activity and is a critical component of the electric utility service
16 Vectren South provides to its customers. Performance of these functions
17 enables Vectren South customers to benefit from energy market activity.
18 Moreover, as ERO steps up reliability requirements, it will have newly enacted
19 enforcement capability via penalties it may impose for lack of compliance with its
20 requirements. It is important that Vectren South be adequately staffed in this
21 area.

22
23 **Q. What is the annual cost of this position?**

24 A. The annual cost of an additional transmission system operator is \$99,200 and is
25 included in Petitioner's Exhibit MSH-2 Adjustment A21.

26
27 **Q. Does Vectren South require the assistance of an additional MISO strategy
28 specialist?**

29 A. Yes. The business of transmission cost recovery and associated short and long
30 term strategic planning and direction is growing increasingly complex and
31 challenging. The MISO market offers many opportunities to utilities for safer and
32 more cost effective operations while maximizing customers benefits, but only if
33 the many complex tariff and operating issues are addressed and resolved on a

1 timely basis. An example is the Regional Expansion Cost Benefit Task Force
2 (RECB) cost recovery incentives recently approved by FERC. These new cost
3 recovery mechanisms are complex but do provide a more cost causative
4 recovery allocation process which will yield potentially significant benefits to
5 Vectren South's customers. A major focus for MISO TOs is providing input to the
6 ever changing and evolving operating requirements and rules. These rules and
7 policies are developed within MISO's committee structure. Utilities wishing to
8 influence future rules and policies must actively participate in that structure and
9 dedicate resources to that effort. This additional employee will also allow Vectren
10 South to increase its involvement in committee participation and shaping MISO's
11 development.

12
13
14 **Q. What is the annual cost for this position?**

15 A. The annual cost of \$101,400 is included in Petitioner's Exhibit MSH-2 Adjustment
16 A21.

17
18 **Q. Are there any other additional positions needed to support MISO**
19 **requirements?**

20 A. Yes. While MISO has provided significant reliability and cost benefits to its
21 members, it has also imposed a significant amount of additional work
22 requirements. An example is the billing settlements process that includes four
23 rounds of settlement invoices for each billing day. While the initial two rounds
24 must be scrutinized very closely, all four require some level of attention for
25 management reporting and follow up activities. To meet this ever growing work
26 requirement, Vectren South is planning to add a Settlements Supervisor position
27 to supervise the daily activities of the MISO Analysts, implement process and
28 software changes as a result of directives from MISO, and ensure accuracy of all
29 data resulting from the MISO billing functions. The annual cost of this position is
30 \$70,250 and is included in Petitioner's Exhibit MSH-2 Adjustment A21.

Federal Reliability Initiatives

Q. Is there an increased national emphasis on system reliability?

A. Yes. The Energy Policy Act of 2005 (EPA 2005) after long years of development through several different Congresses makes important changes to improve reliability, promote investment in electric facilities, enhance our nation's electric infrastructure, improve wholesale competition, and promote greater efficiency in electric generation and delivery. Consistent with EPA 2005, the FERC is taking strong action on multiple fronts to enhance the reliability of our nation's electric transmission system.

On July 20, 2006, the FERC approved the final rule in Promoting Transmission Investment through pricing reform rulemaking. The key provisions of this rule provide:

- Incentive rates of return on equity for new investment by public utilities;
- Full recovery of prudently incurred construction work in progress;
- Full recovery of prudently incurred pre-operations costs;
- Full recovery of prudently incurred costs of abandoned facilities;
- Use of hypothetical capital structure;
- Adjustments to book value for transcos sales/purchases;
- Accelerated depreciation;
- Deferred cost recovery for utilities with retail rate freezes;
- And a higher rate of return on equity for utilities that join and/or continue to be members of transmission organizations.

This rule follows prior actions by FERC to promote increased investment in transmission infrastructure. Importantly, as stated by FERC Chairman Kelliher, the rule recognizes that regulated utilities own the vast majority of existing facilities and thus, while providing even greater incentives to non-utility investment, the Rule also provides a variety of incentives, on a case by case

1 basis, to utilities to support new investment. FERC Chair, Joseph T. Kelliher on
2 July 20, 2006 stated that "There has been a sustained period of underinvestment
3 in the transmission system. Notwithstanding, use of the nation's grid has more
4 than doubled in recent years. It is clear that we need to strengthen the system to
5 meet consumer demand and today's rule takes a significant turn in that direction.
6 Underinvestment in the grid is a national problem."

7
8 On July 20, 2006, FERC certified NERC as the nation's ERO, pursuant to EPA
9 2005. In doing so the FERC generally approved NERC's proposed governance
10 structure, funding, reliability standards development process, enforcement
11 program, and pro forma Regional Entity Delegation Agreement. The FERC
12 Order indicated that NERC, as the ERO, is well positioned to lead the industry's
13 transition to and enforceable system of mandatory reliability standards approved
14 by the FERC.

15
16 The FERC expects to undertake a rulemaking in 2006 as part of its review of the
17 102 reliability standards submitted by NERC for FERC review (RM06-16-000).
18 This rulemaking will determine which of the ERO's reliability standards meet the
19 statutory requirements and which require further development. The ERO and
20 Regional Entities which will be certified late in 2006 or early in 2007 must monitor
21 compliance with the reliability standards. They may direct violators to comply
22 with the standards and impose penalties for violations, subject to review by and
23 appeal to the FERC. At this time the specific steps for enforcement, compliance,
24 and penalties are not known as they are under development. We do know that
25 FERC has authority to impose million-dollar fines, under the EPA 2005, and that
26 FERC Chairman Kelliher has indicated that internal processes to guide
27 determination of penalties are under active development by FERC enforcement
28 staff. Vectren South will continue to monitor the development of these
29 enforcement rules and will provide constructive input, likely by means of
30 comments to FERC Notices of Proposed Rulemaking, for example, as
31 appropriate.
32

1 **Q. How will the FERC's emphasis on enhanced reliability through new**
2 **infrastructure investment and new guidelines and enforcement provisions**
3 **impact utilities such as Vectren South?**

4 **A.** There should be benefits and these benefits will come at some cost. Our
5 country's electric system, particularly the transmission system, needs to be
6 expanded and improved to promote wholesale competition and draw the greatest
7 benefit out of RTO participation for all stakeholders. For Vectren, such
8 improvements should over time provide improved capability to import power. We
9 also need to plan appropriately, including evaluation of our resource needs, to
10 make sure we can meet the new requirements. A major issue in transmission
11 market operations is whether a company can complete a needed transaction to
12 move power between a source and a sink. The new guidelines should increase
13 the predictability of completing needed transactions. Depending upon the hour
14 by hour operating conditions of the transmission system, location of on line
15 generation and load levels, some transactions cannot be completed due to
16 equipment overloads. Each transaction is tested initially using a power modeling
17 tool called the State Estimator. If the State Estimator indicates that a proposed
18 transaction will cause unsafe thermal or dynamic operating conditions on the
19 grid, then the transaction is not permitted.

20
21 I also believe there will be implications on distribution system reliability as well.
22 As the transmission system is improved, much of the distribution system will also
23 see improvements at the same time. Utilities attempt to pursue least cost
24 approaches to maintenance and improvements, so where distribution equipment
25 is in proximity to transmission improvements, it will likely be upgraded as well.
26 Our specific plans will detail these improvements as they unfold. The July 2006
27 heat wave that brought rolling blackouts to California and other areas
28 demonstrates the importance of both transmission and distribution reliability, as
29 did the blackout of 2003. In the case of the 2003 outage, which affected millions
30 of people throughout the northeast and eastern U.S., the cause was a sagging
31 transmission line in Ohio that contacted a tree limb and tripped out. The resulting
32 cascading outages demonstrate the potential for major outages unless the
33 overall electric grid is improved and maintained on a consistent basis.

1
2 **Q. Do you foresee additional federal efforts to improve the reliability of the**
3 **U.S. electric transmission system?**

4 A. Yes. Many utilities are still not members of an approved RTO. As the ERO is
5 implemented, I would expect to see incentives included to encourage RTO
6 membership. In addition, I expect greatly expanded reporting responsibilities and
7 compliance with several new standards of reporting, construction, planning, and
8 operation to improve the seamless operation of the system. I also foresee
9 pricing innovation to encourage utilities to use the market system for least cost
10 procurement of energy. All of these changes will tend to improve the reliable
11 operation of the U.S. transmission grid. A good example is MISO's recent steps
12 to encourage investment by providing cost recovery incentives and investment
13 alternatives and opportunities.

14
15 **Q. What is Vectren South doing to maintain or improve the reliability of its**
16 **transmission and distribution system?**

17 A. Vectren South is focused on ensuring that its transmission and distribution
18 system are adequate to meet the needs of our changing energy market. For our
19 distribution system, we have embarked upon an aggressive engineering strategy
20 for the thorough inspection, maintenance, and where necessary replacement of
21 electric distribution system components as may be needed.

22
23 **Q. What is the benefit of such a broad reliability initiative?**

24 A. Maintaining and enhancing the reliability of our distribution and transmission
25 system will allow Vectren South to be in compliance with the new ERO
26 standards. More importantly, our customers will benefit from enjoying the most
27 reliable and adequate electric service we can reasonably supply. For some
28 customers, that means when severe storms blow through their neighborhood,
29 their lights will stay on. For other customers, it means that their industrial and
30 commercial manufacturing practices will be less likely to be interrupted or
31 harmed. No matter how thorough inspection and maintenance may be, nor how
32 extreme capital investment may become, there will always be instances of power
33 interruption and power variances. Nonetheless, our proposed reliability initiative

1 will for reasonable cost make Vectren South's transmission and distribution
2 system as reliable as reasonably possible. Vectren South has included several
3 pro forma adjustments in its case related to enhancing reliability and recovering
4 the cost of added or planned infrastructure improvements. These pro forma
5 adjustments are included in witness M. Susan Hardwick's revenue requirements
6 determination and are explained in the testimony of Witness Eric J. Schach.

7
8 **VECTREN SOUTH'S AGING WORKFORCE**

9
10 **Q. Does Vectren South have any significant changes occurring in its**
11 **workforce?**

12 A. Yes. Nationally, as baby boomers reach retirement age, a large number of long
13 time skilled and experienced employees are preparing to retire over the next
14 fifteen years. This is reflective of a generally aging workforce. The sheer
15 magnitude of the anticipated retirements has drawn great attention to the issue
16 and as a result, a heightened level of human resource planning has commenced
17 as companies are focusing on their recruiting and training programs to assure
18 that business productivity will not suffer. Vectren South is keenly aware of this
19 potentially critical business problem, and has engaged in a planning process,
20 inclusive of senior management, to enable the Company to address the issue
21 before it threatens the reliability of the service we provide to our customers.

22
23 **Q. Have you personally been involved in this planning effort?**

24 A. Yes. I am the executive sponsor of a team consisting of operations and human
25 resources personnel who have devoted significant time to setting out the
26 dimensions of the problem as it pertains directly to Vectren, and have made
27 recommendations to management on how to timely respond to the aging of our
28 workforce.

29
30 **Q. Does the utility industry face the same dilemma as its counterparts in other**
31 **industries?**

32 A. Yes. According to Bureau of Labor statistics, over 30% of the existing utility
33 workforce will be eligible for retirement over the next 5 years, and by 2012 there

1 may be 10,000 more utility jobs than available workers. A number of such
2 studies indicate that the looming percentage of retirements in the utility industry
3 makes the issue even more acute than in other industries.

4
5 As Vectren South has approached this issue, it has collected and referred to a
6 great deal of data being reviewed by the industry. A recent article, entitled,
7 "Brain Drain: Our Graying Utilities," cited data that "the median age for workers in
8 the utility sector (including telecom) is 3.3 years higher than the national average,
9 with nearly half of the utility workforce currently over the age of 45." Energybiz
10 Magazine November/December 2004, by Arthur O'Donnell. Some are referring
11 to this situation as a "demographic time bomb," and Dominion Resources has
12 labeled the phenomenon "The Wave" as it braces to face the fact that 45% of its
13 workers will be eligible to retire by 2012. (Id.) Another study found that the
14 average age of the workforce in power plants is 48 years. (Krishnan &
15 Associates).

16
17 Exacerbating the situation is the time line involved in training new replacement
18 employees. A PEPCO IBEW employee explained this constraint as follows:
19 "From hiring to journeyman's level, it's a minimum of five years. To get to lead
20 level, it takes 10 years." (Id.)

21
22 The American Public Power Association (APPA) surveyed its members and
23 produced a report on the aging workforce defining this as the "new challenge to
24 its members." The findings were that half the companies project the potential
25 loss of somewhere between 21-50% of their workforce over the next five years.
26 The companies indicated that knowledge loss would be the single greatest
27 problem resulting from the retirements, with finding replacements also a great
28 challenge. The APPA outlined steps for its members to take to address the
29 retirement onslaught, including identifying gaps in terms of ongoing productivity
30 needs and investing in training resources. The emphasis is to be proactive in
31 order to commence the necessary development of a new workforce before the
32 wave of retirements hits.

1 **Q. What specific steps has the utility industry begun to take to address the**
2 **aging workforce issue?**

3 A. Approaches will differ by company, but core strategies have focused on hiring
4 now in areas that will experience significant attrition in order to commence
5 training and knowledge transfer, and beefing up current training efforts. There is
6 also a general recognition that the available labor pool is finite and competition
7 for the new workforce could be significant as all industries face replacement
8 needs.

9
10 Preparation includes figuring out how to recruit and train the future workforce.
11 For example, the Midwest Independent System Operator or "MISO" has
12 established relationships with colleges to begin developing skilled workers, and
13 First Energy has partnered with five universities to create degree programs for
14 future line and substation crews. (Energybiz Magazine, p. 24).

15
16 **Q. Does Vectren have workforce aging issues similar to the rest of the utility**
17 **industry?**

18 A. Yes. Over the next 15 years retirements are expected to impact the Vectren
19 workforce as follows:
20
21

Bargaining Unit			
Years	Potential Retirements	Current Employment	%
2007 – 2011	133	872	15.2%
2012 – 2016	159	872	18.2%
2017 – 2021	210	872	24.1%
Cumulative	502	872	57.6%

Non-Bargaining Unit			
Years	Potential	Current	%

	Retirements	Employment	
2007 – 2011	70	889	7.9%
2012 – 2016	115	889	12.9%
2017 – 2021	148	889	16.6%
Cumulative	332	889	37.4%

1
2 These tables suggest that over 47% of Vectren's current workforce will retire by
3 the year 2021. This is especially critical in the bargaining unit employee group
4 where retirements will be nearly 58% of the current workforce. In addition, these
5 amounts assume that potential retirements will occur, on average, when
6 employees reach age 62. At Vectren South, actual eligibility for retirement with
7 benefits occurs at age 55. In fact, actual experience over the past several years
8 indicates an average retirement age for the bargaining unit of 60.5. Thus, the
9 large numbers actually represent a fairly conservative estimate. As described
10 hereafter, the wave of retirements will pose particularly serious challenges in
11 certain areas of the bargaining workforce where trained technical Energy
12 Delivery and Power Supply workers are essential to providing electric and gas
13 services to Vectren South's customers.
14

15 **Q. Has Vectren South had a similar level of retirements in the past five years?**

16 A. While we have not seen a dramatic escalation in retirements as of yet, we have
17 detected an increase in recent years. As shown above, we are very confident
18 that we will see a major increase in retirements in the next few years.
19

20 **Q. How certain are you that these workers will retire in the numbers and time**
21 **frames you describe?**

22 A. The age of the employees is an absolute fact known with certainty. The eligible
23 retirement age and the average age of retirement for Vectren South employees
24 are again absolute facts known with certainty. Therefore, I conclude that the
25 tables shown herein and the conclusion that this is a critical problem for Vectren
26 South and its customers is very real, and must be dealt with on a proactive basis
27 to ensure continuity of good customer service at the lowest possible cost. Our

own knowledge of these statistics caused us to invest time in the study and planning process I described earlier.

Q. Can Vectren South do anything now to prepare for this inevitable loss of experienced workers?

A. Yes. We must take action now to avoid a future shortage of skilled employees. For Vectren South, an approach of waiting to hire replacement workers as employees actually retire would leave us unable to maintain work levels and customer service levels because of the lengthy required apprenticeship training process new bargaining unit employees must go through. Rather, we must implement a plan that brings on new employees in advance of retirements so that they can begin the up to four year apprenticeship training and be prepared to fill the role of retiring employees with decades of utility experience.

VECTREN'S PLANNING APPROACH

Q. Has Vectren South developed a plan to effectively manage the impact of the aging workforce problem so sufficient resources remain available to maintain reliable service?

A. Yes. Several years ago Vectren South realized that this was a growing problem. In 2005 Vectren management established a "Workforce Planning Team" comprised of representatives from the Human Resources and Operations Departments. The Team began by breaking the problem into four major components:

Workforce Strategy – Determining the workforce requirements to achieve our business objectives and establish plans outlining how these workforce requirements will be met.

Workforce Planning – Analyze business requirements and plan the workforce to develop and maintain skills/competencies required to meet Vectren's objectives.

Training Development – Establish training priorities and evaluate program effectiveness relative to developing skills and competencies.

1 Knowledge Capture – Identify tools and methods used to capture the
2 knowledge and experience of the workforce.
3

4 **Q. What progress has the workforce planning team made since its formation?**

5 A. The Workforce Planning Team determined that a critical need exists to hire
6 significant numbers of new apprenticeship employees in the near term in order to
7 have sufficient skilled employees in later years.
8

9 As background, in 2005 the focus of the Workforce Strategy effort was on
10 building alliances with Midwest Universities to provide critical training at a
11 reasonable cost. Work also included the establishment of an intern program and
12 the aligning of Human Resources strategies with existing Energy Delivery
13 initiatives (Asset Management, Work Optimization, etc.). The Workforce
14 Planning effort upgraded bargaining unit hiring standards, and built succession
15 plans below the manager level. The Training Development effort included
16 collaboration with IVY Tech regarding annual training grants, evaluation of a
17 variety of training proposals, and enhancement of in-house training programs.
18 The Knowledge Capture effort included initiation of contacts with AGA, MEA, and
19 EEL to begin a benchmarking program. Additionally, the Team began prioritizing
20 and capturing knowledge in Energy Delivery and Power Supply.
21

22 In 2006, the Workforce Strategy effort began focusing on identifying competition
23 for its workforce and determining what Vectren must do to stay ahead of the
24 competition. The Workforce Planning effort gathered data related to historical
25 average retirement dates, existing employee potential retirement dates, and
26 specific critical skill gaps by classification. Additionally, they established plans for
27 dealing with potential skill gaps. The Training Development effort continued to
28 identify effective and low cost training alliances, and began identifying and
29 improving internal training process opportunities. The Knowledge Capture effort
30 focused on developing a process for the identification, capture, and
31 communication of knowledge retention needs.
32

1 The team then reviewed each job classification to determine how retirements
2 would impact performance. It became apparent that in many areas, the
3 retirements could be managed over time without significant incremental effort,
4 but that in certain areas, the turnover in the next 5-10 years would be
5 unprecedented.

6
7 **Q. Has the team developed replacement strategies for both bargaining and**
8 **non-bargaining employees?**

9 A. Yes. Generally, the Team has focused on improved processes for recruiting,
10 training and developing employees. While key non-bargaining employees will
11 also be lost, the approach to replacing such employees will be critical, but more
12 individualized in nature. The Team has identified the need to aggressively hire a
13 large group of bargaining unit replacements for two reasons. First, the exposure
14 in numbers of employees the Company is at risk of losing is much higher. Also
15 Vectren South has recognized that the training requirements and cycle needed to
16 move employees from the apprentice level to a fully productive journeyman level
17 in various job classifications is well defined in terms of time and content.

18
19
20 **Aging workforce impact on Vectren South's Electric Operations**

21
22 **Q. How will bargaining unit retirements impact the electric business?**

23 A. Vectren South operations has two primary areas affecting electric customers –
24 Energy Delivery (electric operations) dealing with operation of the transmission
25 and distribution system including customer service, and Power Supply covering
26 power plants. Over the next four year period, the retirements in Energy Delivery
27 will mainly impact the Electrician, and Line Specialist job classifications. Over
28 the same time period, the retirements in Power Supply will mainly impact the
29 Electrician, Repair Mechanic, Auxiliary Equipment Operator, and Coal/Yard
30 Equipment Operator job classifications. Vectren South witness Ronald G.
31 Jochum will discuss the positions in Power Supply. I will discuss the Energy
32 Delivery positions. The pro forma adjustment I propose will address the aging
33 workforce issues for bargaining unit employees and their immediate supervisors

1 only. The remaining non-bargaining unit employees affected could constitute an
2 additional pro forma adjustment, but we have elected to exclude that impact from
3 proposed electric rates.
4

5 **Q. Could you describe the process associated with filling the energy delivery**
6 **openings generated within these job classifications with qualified**
7 **employees?**

8 A. Yes. The specific skills required to become qualified to perform any of these job
9 functions are not typically available in the marketplace and must be developed
10 through apprenticeship programs. These apprenticeship programs typically take
11 3 to 4 years to complete. This lag-time between hiring and completion of the
12 apprenticeship program means that the productivity of each new hire rises
13 gradually over this period, both due to time dedicated to training activities and the
14 natural learning curve. Essentially, 3-4 apprentices equal one experienced
15 employee's in terms of productivity in these important jobs. These
16 apprenticeship programs are designed with competency checkpoints every 6
17 months. Moreover, historical experience indicates that in certain areas such as
18 Line Specialists approximately 25% drop-out of the program due to a variety of
19 reasons including, lack of appropriate skills, or the desire to work as a Contractor
20 where they perceive the potential for more income through overtime.
21
22

23 **Q. Please describe the Electric Apprenticeship Program more fully.**

24 A. The apprentice program is a combination of classroom, hands-on in a controlled
25 setting, and on-the-job training over four years. During this training the
26 apprentice will learn, practice, and demonstrate proficiency in the actual skills
27 needed to be a Line Specialist. This is done under the observation and tutelage
28 of professional trainers and journeymen Line Specialists. The program covers all
29 major aspects required to carry out the day to day responsibilities for operation,
30 maintenance, and construction of our electric transmission and distribution
31 system.
32

1 The apprentice training program includes subjects such as electric theory,
2 overhead and underground electric systems, troubleshooting, tool and equipment
3 use, safety and communication practices, live line work, materials and rigging. In
4 addition to the electric apprentice skill training, other key areas such as customer
5 service, company policy, and additional safety subjects are all interwoven in the
6 program.

7
8 The demonstration of skill and knowledge is required as the employee
9 progresses through the four year program. Multiple locations will be used for
10 training which is dependent on the subject matter and controlled field training
11 needs. Line skills are learned and hands-on experience is gained over the term
12 of the apprentice program under the observation and guidance of local
13 journeyman Line Specialists, supervisors, and/or trainers.

14
15 Apprentices spend a minimum of four years in this program before being eligible
16 to earn the Line Specialist job classification. Once a Line Specialist, the
17 employee will require an additional two to four years in the field before gaining
18 the experience, problem-solving, and leadership skills necessary to be fully
19 productive and proficient.

20
21 The demonstration of skill and knowledge is required as the employee
22 progresses through the four year program. Multiple locations will be used for
23 training which is dependent on the subject matter and controlled field training
24 needs. On the job skill is learned and hands-on experience is gained over the
25 term of the apprentice program under the observation and guidance of a local
26 journeyman Line Specialist, supervisor, and/or trainer.

27
28 Apprentices spend a minimum of four years in this program before being eligible
29 to earn the journeyman job classification. Now a journeyman Line Specialist, the
30 employee will require an additional two to four years, working in adverse
31 conditions, before becoming fully productive and efficient.
32
33

1 **Q. When will Vectren South commence hiring apprentices to replace the**
2 **upcoming retirees?**

3 A. The hiring is driven by projecting the timing of retirements and the level of staffing
4 over time required by the Company. This analysis has been applied to each job
5 classification.

6
7 By way of example, in Energy Delivery there are currently 63 Line Specialists.
8 Using a projected retirement age of 62 years, which is conservative since many
9 employees are choosing to retire earlier, Vectren South will lose 20 of these
10 specialists over the next decade, with 4 leaving in 2007. Thus, in a 10 year
11 planning period, we will lose one-third of the workforce. We must stage hiring to
12 train groups of new employees to offset these retirements, and we must account
13 for attrition. We have determined that the timing of anticipated retirement calls
14 for 11 hires in 2007. In addition there is a need to hire 10 apprentices addressed
15 in Witness Eric J. Schach's testimony, resulting in a total hiring of 21 line
16 specialist apprentices in 2007. This includes 3 apprentices to allow for
17 anticipated attrition and ensure that there will be sufficient line specialists trained
18 by 2010 to coincide with replacing 8 retirees who are projected to leave as
19 follows: 4 in 2007, 1 in 2008, 2 in 2009, and 1 in 2010. This plan is not without
20 risks. Variables include the actually timing of retirements, the speed with which
21 the trainees gain skills and the amount of apprentices who successfully complete
22 the program.

23
24 We have applied the same approach across the Energy Delivery and Power
25 Supply job categories, timing hires in the near term to replace the growing
26 number of retirees.

27
28 **Q. Is this approach reasonable?**

29 A. Yes. After reviewing how the industry is considering addressing the aging
30 workforce issue, Vectren South proposes to follow a similar approach. The
31 HR/Operations team has summarized the issue for the Company as follows: "We
32 are a highly regulated and technical business that requires talented employees
33 who possess specific competencies and skill sets. In the next few years, we are

1 expecting retirements to be at a pace that may double or triple historical levels.
2 Because of that risk, we are looking at all of our key HR and training processes
3 to ensure we will be able to recruit, assimilate and develop new Vectren
4 Colleagues at a more rapid pace than any other time in Vectren's history." As
5 discussed, Vectren South has begun to work with local universities on plans for
6 training potential employees, and is also engaged in internal efforts to create
7 more efficient work processes and means of capturing and transferring
8 knowledge.

9
10 Vectren South has determined that it will manage loss of non-bargaining
11 personnel through traditional recruiting efforts, although internal succession
12 planning and training efforts will require greater emphasis in an effort to better
13 prepare the existing employees to step up and fill vacancies. Additional staffing
14 and contract costs expected to be incurred in the Human Resources area to
15 support the higher turn-over to support our approach to the aging issues,
16 including focusing on the need to address non-bargaining employee retirements
17 are described elsewhere in my testimony.

18
19 **Q. Is Vectren South's historic training program capable of handling this large**
20 **influx of new hires?**

21 **A.** No. As discussed further, in conjunction with hiring the next generation of
22 workers, we must anticipate their training needs and increase our resources to
23 assure the apprenticeship program yields well trained, skilled employees.

24
25 **The Aging Workforce pro forma adjustment**

26
27 **Q. What is the impact of the aging workforce adjustment for Vectren South-**
28 **Electric Energy Delivery operations?**

29 **A.** Petitioner's Exhibit No. WSD-2 is a summary of the Energy Delivery – Electric
30 Aging Workforce pro forma adjustment Petitioner's Exhibit No. WSD-3 is a table
31 consisting of active employees, planned hires, and the number of eligible
32 retirements in the years 2007 – 2025 by classification for Energy Delivery.
33 Energy Delivery plans to add 17 FTE for its electric operations consisting of 11

1 Line Specialist apprentices, an Electric Supervisor, a Training Manager, two
2 Electric Technical Training Consultants, and two Substation Electrician
3 apprentices. These new employees result in additional bargaining unit labor cost
4 of \$631,955, and additional allocated labor cost amounts of \$66,780 for an
5 Electric Supervisor, \$16,593 for a Training Manager, \$190,800 for Training
6 Consultants, and an allocated share of an additional Supervisor of \$34,969
7 during the pro forma period following the end of the test year. We have included
8 an offset to that adjustment amount of \$(231,710) reflecting a reduction in labor
9 costs due to retirements during the pro forma period. In addition, Vectren South
10 proposes to include training costs of \$166,500 and contract labor costs of
11 \$397,774 as pro forma adjustments in the test year. I have also included the
12 costs of an Engineering Cooperative to provide cost effective engineering
13 expertise to Vectren South and also identify excellent engineer prospective
14 employees in the future. The Engineering Cooperative pro forma adjustment is
15 \$21,942. The total impact of the aging workforce pro forma adjustment, as
16 included in Vectren South-Electric energy delivery operating and maintenance
17 expenses, is \$1,295,603 and is included in Petitioner's Exhibit MSH-2,
18 Adjustment A23.

19
20 **Q. Please further discuss the 17 additional FTEs required for the aging**
21 **workforce adjustment.**

22 A. There are two distinct forces affecting the need for additional FTEs as a result of
23 the aging workforce issue. These forces are most evident in the Line Specialist
24 and Electrician job classifications for Vectren South electric Energy Delivery
25 operations. I have chosen these job classifications as they require a significant
26 amount of training and apprenticeship time. The proposed adjustment considers
27 the full effect of both replacing the retiring workers along with netting out the
28 savings due to the retirements, and additional workers needed to prepare for the
29 aging workforce issue to unfold here in southern Indiana. Line Specialists are
30 responsible for overhead and underground distribution system maintenance and
31 construction activities associated with electric lines. On overhead systems, they
32 erect poles, assemble cross-arms, fix fittings and guys to the poles, string
33 conductor, energize the lines and test the circuits. On underground systems,

1 they trench, lay cable, splice cable, tie systems together, energize the system,
2 and test circuits. Electricians generally work in substations performing
3 maintenance tasks, switching, operating tasks, and inspections.
4

5 First, Vectren South must replace the retiring employees to maintain adequate
6 workforce numbers of employees needed to perform essential distribution system
7 work activities such as switching, outage restoration, maintenance, inspections,
8 and numerous other operations tasks. These tasks are essential to maintain a
9 safe, reliable distribution system and good customer service. Due to past
10 retirements and an ongoing effort to keep rates and operating costs low, Vectren
11 South has seen employee levels drop to levels which threaten customer service
12 if they were to go any lower. Eleven of the new Line Specialist apprentices
13 included in this adjustment pertain to retirement replacements. These additional
14 workers are needed now so they can begin their training and four-year
15 apprenticeship programs immediately and offset contract labor costs as soon as
16 they are fully productive.
17

18 Second, in examining the aging workforce issue, Vectren South has determined
19 that it must add FTEs in numbers greater than just those needed to replace
20 expected retirements. These additional 10 workers, described in Mr. Schach's
21 testimony, are needed to increase our baseline workforce to allow us to perform
22 more preventative maintenance activities.
23
24

25 **Q. Are there other reasons why the additional employees must be added now?**

26 **A.** Yes. Vectren South anticipates challenges in maintaining its necessary
27 workforce in the future due to two related but separate issues. First, we
28 anticipate an overall worker shortage as the effects of the retiring baby boomers
29 are increasingly felt in the labor market. It is generally agreed upon by experts in
30 the labor market that such shortages will occur and may significantly compromise
31 Vectren South's ability to hire needed employees when they are needed.
32 Second, the numbers of future workers electing to pursue the craft trades and
33 become trained line specialists and electricians is even more reduced than the

1 overall constrained future labor pool. We anticipate a very competitive market in
2 the future for line specialist and electrician apprentices and journeymen. Vectren
3 South is not willing to risk compromises in customer service and safe field
4 operations due to worker shortages in the future and believe we should
5 proactively hire these needed replacements now so they will be fully trained and
6 in place as fully productive employees as they are needed.

7
8 **Q. Why must you incur incremental contract labor costs during the period of**
9 **time the new employees are in their apprenticeship and training programs?**

10 A. As the new employees are trained and utilized, we have observed that they are
11 only partially productive while building knowledge and experience for the first
12 several years. Therefore, I have included a productivity factor for the apprentices
13 during their first four years of employment. I have factored in that new
14 employees are 50% effective in first year, about 60% effective in the second
15 year, 75% effective in the third year, and about 90% effective in the fourth year,
16 and do not become fully productive until they begin their fifth year.

17
18 Finally, as described more below, to fill the productivity void created by
19 retirements, we will increase our use of contract labor. Because the level of
20 actual hirings is designed to provide us with the right level of full time employees,
21 rather than over hire additional less productive trainees, we will supplement them
22 with contractors to make sure all necessary work gets done. The need to
23 maintain overall productivity and consider the ability of our new employees
24 supports the pro forma adjustment reflecting the additional contract labor costs
25 necessary to serve customers.

26
27 **Aging Workforce implications on Human Resources**

28
29 **Q. Please discuss the aging workforce-related effects on the Human**
30 **Resources Department.**

31 A. Vectren South Energy Delivery (as well as the rest of Vectren's operations) will
32 require significant support from Human Resources (HR) to manage our way
33 through the aging workforce challenges. HR plans to use an optimized blend of

1 additional employees and outside contract services to provide the most cost
2 effective support resources to the Vectren South workforce. In particular, there
3 are five areas of support that will be required from HR. They are:

- 4 ▪ Retirement education and planning. As workers prepare for retirement at a
5 level that will be 2 – 3 times the present pace, there are many questions and
6 issues to address. Particular attention will be paid to financial planning,
7 insurance issues, and health care concerns. Due to the extensive
8 specialized information required, retirement education and training will be
9 administered by Vectren South and provided by a contract firm. This
10 resource will provide support across the organization and the cost is therefore
11 allocated. The Vectren South-Electric allocated amount is \$33,440.
- 12 ▪ Safety Training. New employees will require significant amounts of safety
13 training to ensure a safe work environment. In addition, there are OSHA
14 compliance requirements that Vectren South-Electric must meet. The
15 training will focus particularly in the areas of critical equipment operations,
16 accident prevention, and systems and tools training. Accordingly, there will
17 be a significant amount of training provided by specialized contract firms
18 which will provide a cost effective approach to providing these services. The
19 Vectren South-Electric allocated amount for safety training is \$151,545.
- 20 ▪ Recruiting. In the tight labor market will be a continuous challenge.
21 Obtaining the best possible individuals for Vectren South-Electric' work force
22 is a critical task. In addition, Vectren South-Electric continues its efforts to
23 diversify its workforce and must apply additional specialized recruiting
24 techniques and resources to ensure that all qualified candidates are
25 considered for employment in all jobs throughout the company. As part of the
26 recruiting effort, HR will also perform pre-employment testing. The
27 adjustment for recruiting consists of one FTE and specialized contract
28 services for general recruiting and diversification search firms. The Vectren
29 South-Electric allocated amount of these labor costs is \$15,951. The
30 allocated non-labor recruiting amount is \$91,960.

- 1 ▪ Supervisor Training/Leadership Development. Supervisory training will be
2 driven in part by the aging workforce requirements as they affect both
3 bargaining unit and non-bargaining unit positions. Succession planning
4 relates to existing employees. In the area of succession planning, there will
5 be significant efforts in identifying employees who have potential to replace
6 retiring employees in supervisory jobs, and engaging in skill development for
7 those employees that will prepare them to move into positions that open up
8 as a result of retirements. An example would be using resources from local
9 universities to provide continued education opportunities. Since we have not
10 included a pro forma adjustment for actually hiring employees to replace
11 supervisory vacancies that will occur in both the bargaining and non-
12 bargaining areas, this exercise is very important to maintain expertise and
13 train the future leaders in the Company. The Vectren South-Electric allocated
14 labor amount is \$15,951 and the non-labor amount is \$83,600.

- 15 ▪ HR Employee Services. With the turnover anticipated at Vectren South-Gas
16 we anticipate a major increase in compensation and benefit queries,
17 employee handbook updates, and medical benefits questions. We must be
18 prepared to serve our employees promptly and with the best possible
19 information we can provide. Successfully providing these services is
20 essential to employee satisfaction, which is absolutely critical to hiring and
21 retention of qualified and motivated employees. It has been our experience
22 that satisfied employees provide good service and good performance
23 resulting in satisfied customers. Vectren South-Electric has traditionally kept
24 its support staff at the minimum needed to serve its employees effectively.
25 This is borne out by a review of industry data that shows we have a smaller
26 HR staff than our peers. However, it is anticipated that the aging workforce
27 impacts on operations and support areas will increase workload significantly
28 for this small staff. Therefore, HR proposes to add one FTE to augment
29 existing staff and provide adequate service to employees in all HR service
30 areas. The Vectren South-electric allocated amount of this adjustment is
31 \$31,530.

1 **Q. What is the total input of the HR component of the overall aging workforce**
2 **adjustment?**

3 A. While aging workforce is certainly a driver of the HR adjustments, as I have
4 indicated, HR is an area where we could have for some time justified additional
5 resources to better serve our employees. Petitioner's Exhibit WSD-2 shows the
6 three additional HR FTEs result in a pro forma adjustment for Vectren South-
7 Electric of \$63,432. The non-labor portion of the HR aspect of the adjustment,
8 consisting of consulting resources and training costs, is \$360,545. The total HR
9 pro forma adjustment related to Vectren South-Gas is \$423,977.

10
11 **Q. Do you support the need for these additional HR resources and programs**
12 **for your operations area?**

13 A. Yes, I do. For many years, I have worked closely with the HR department, and I
14 rely on them heavily to help supervise and manage issues related to our
15 workforce. These employees and programs will aid in building and maintaining
16 the type of workforce that Vectren South-Electric's customers will need in the
17 near future. Recently, Vectren compared its HR function with the utility industry
18 using information from the Saratoga Group, an internationally known HR analysis
19 firm. We found that Vectren is extremely efficient, with a ratio of 1:148 HR
20 employees to non-HR employees compared to the industry average of 1:89.
21 Based on this metric, I am quite comfortable supporting these additional HR
22 resources. These adjustments are very reasonable and are clearly needed by
23 the HR area to effectively support my operations areas.

24
25 **Aging Workforce Summary**

26
27 **Q. What then is the total impact of the electric operations Energy Delivery**
28 **aging workforce adjustment for Vectren South?**

29 A. The total aging workforce amount for Vectren South Energy Delivery is
30 \$1,719,580 as shown in Petitioner's Exhibit MSH-2 Adjustment A23. This
31 amount includes both the Energy Delivery costs of \$1,295,603, and the additional
32 employees and related costs in the Human Resources area of \$423,977.

33

1 **Q. Will the hiring necessary to address the aging workforce challenges facing**
2 **Vectren South be a one time phenomenon?**

3 A. No. Because the retirements continue over the next 20 years, we project further
4 significant hiring. Thus, for example, looking at the Line Specialist job, we project
5 hiring an additional 10 trainees in 2011 and 15 more in 2015, again allowing time
6 for them to go through apprenticeships and become productive as additional
7 retirees leave the Company.
8

9 **Q. What are the possible consequences if you fail to fill these positions?**

10 A. Since these are front-line positions that interface directly with customers it is my
11 judgment, and a reasonable conclusion, that customer service levels will decline
12 in the next ten years if these positions are not filled at this time. The areas most
13 affected by these employees in Vectren South-Electric's operations are
14 equipment inspections, switching operations, maintenance of substation,
15 overhead and underground electric delivery equipment, and service restoration
16 following storms or other outage causes. All of these tasks directly affect our
17 ability to provide reliable service to our customers.
18

19 **Q. Why is this adjustment reasonable?**

20 A. Vectren South has made every effort to keep rates low by managing employee
21 numbers to the lowest reasonable level by using attrition and replacing only
22 those jobs that are required. This strategy has worked well for several years.
23 Now, however, it is time to shift strategies to one of matching future workforce
24 levels to the requirements of the electric delivery system and Vectren South's
25 electric customers. While these additional employees, training costs, and
26 contract labor components result in cost increases, adding the employees now
27 and having them in place as retirements occur is a prudent and reasonable
28 approach resulting in the lowest possible cost of operations and good customer
29 service levels. The need for these employees is very real and clearly
30 documented. The benefits to Vectren South's customers are also very real and
31 must be attained. I can only conclude that this is a very reasonable adjustment.
32
33

TRAINING AND SAFETY PROGRAMS

Q. Does Vectren South-Electric propose to expand its training for its field electric employees?

A. Yes. In addition to the apprenticeship and other on the job training already provided to electric field employees, Vectren South-Electric will implement a new emergency response safety continuing education program for field employees. This will ensure that they are up to date and aware of current procedures to safely address emergency situations. They will receive more frequent and recurring training in activities such as evacuating the area, assessing area risk, determining the nature and location of risk, coordinating contact and action with other company representatives and emergency responders, preservation of the scene, and other actions to protect the public safety. This will include recurring updated training on emergency procedures. The emphasis will be on customer and employee safety in situations of emergency response. This training occurs already; however, we believe that our employees and the public will benefit from greater repetition and enhancement of these programs.

Q. Is the electric employee training you have described a reasonable and necessary expense?

A. Yes. This training is necessary to increase our employees understanding and compliance with procedures and safety requirements relating to emergency field operations. Safe and effective response to emergencies requires employees to go beyond mere compliance with procedures and make effective judgments and interpretations regarding circumstances they face. This additional training is important to developing the skills to make appropriate decisions in emergencies and reduce the risk of customer and employee injuries.

Q. As part of worker safety efforts, does Vectren South-Electric coordinate with local emergency agencies?

A. Yes. Our employees review emergency procedures and communication processes with local police and fire agencies and we also perform "Live Line" demonstrations. These demonstrations emphasize the dangers of energized

1 electric conductors and provide direction on how to handle a live-wire situation.
2 Although we have good working relationships with the various local emergency
3 responders such as police, fire, Homeland Security and local Emergency
4 Management Agencies, we plan to become more extensively involved with these
5 agencies to improve our overall emergency response.
6

7 **Q. How do these activities benefit Vectren South-Electric's customers?**

8 A. These activities help protect the safety of emergency responders, construction
9 workers, and all individuals who may be in the vicinity of an emergency situation.
10 Vectren South employees learn necessary information and refine their skills in
11 coordinating their utility expertise and efforts with the objectives and skills of
12 other emergency personnel. Similarly, non-utility emergency personnel learn
13 from Vectren employees what must be done to avoid injury from utility services.
14 Through the increased knowledge and enhanced coordination of all participants,
15 these activities result in more prompt restoration of utility service.
16

17 **Q. What is the annual cost of this continuing training and safety programs?**

18 A. The additional annual cost of this new continuing training is \$145,403 and is
19 included in Petitioner's Exhibit No. MSH-2, Adjustment A20.
20

21 **Q. Do you have other plans to address worker safety in the near future?**

22 A. Yes. Vectren South-Electric plans to add a Safety/Hygiene Consultant to
23 conduct field audits for employee and contractor safety compliance. It is
24 Vectren's objective to achieve best in class safety performance on a timely basis.
25 Hiring and deployment of a Safety/Hygiene Consultant will assist in
26 accomplishing that objective.

27 **Q. What will be the duties of the new employee?**

28 A. The new employee will conduct the field safety and will work to enhance the field
29 "tailgate" worker training sessions with an appropriate safety focus on use of
30 protective equipment and the employment of safe work practices. The new
31 employee will also lead safety compliance reporting, ensure required training is
32 completed on a comprehensive and timely basis, develop safety training

1 materials, conduct safety presentations, act as the liaison with medical facilities
2 in the event of employee injuries and return to work physicals. The new
3 employee will also coordinate drug and alcohol testing, and determine cost
4 effective ways in which Vectren South may reduce job induced routine physical
5 and emotional stress on employees.

6 **Q. What is the pro forma expense associated with the safety/hygiene**
7 **employee?**

8 A. The Vectren South-Electric operations allocated annual cost impact is \$19,665
9 and is included in Petitioner's Exhibit No. MSH-2, Adjustment A21.

10
11 **ASSET MANAGEMENT TRANSFORMATION**

12
13
14 **Q. Please describe Vectren's Asset Management Transformation initiative.**

15 A. Asset Management Transformation ("AMT") was initiated in 2004. AMT is a
16 multiyear program intended to more efficiently manage Vectren's pipes, wires
17 and people – Vectren's assets. AMT uses structured programs, standardized
18 work practices and an increased use of information technology to enable
19 sustainable cost control. The AMT project is divided into the following tracks: 1).
20 Capital investment planning and budgeting process; 2). Engineering programs
21 and practices for project design standardization; 3). Work execution initiatives;
22 and 4). Implementation of performance management techniques to better
23 measure the success of these initiatives.

24
25 Each of the AMT tracks represent focus areas that, when combined, will enable
26 Vectren South to target its capital investment decisions on infrastructure that will
27 achieve our objectives with the lowest capital and O&M costs. Asset analysis
28 tools will be deployed for input on capital spending decisions. New technology
29 and processes will be implemented to allow Vectren to successfully complete the
30 work in the most efficient way possible. Lastly, performance measurement tools
31 will be implemented to review the resulting processes and insure continuous
32 improvement via key performance indicators.
33

1 **Q. Why has Vectren undertaken AMT?**

2 A. The primary driver for undertaking AMT is to implement a more structured set of
3 processes across Vectren's Energy Delivery organization in support of our capital
4 investment management practices – from beginning to end. By focusing
5 improvement opportunities on the core utility infrastructure practices and
6 processes, we believe we will better position Vectren South to more effectively
7 meet the challenges it faces while serving our customers at a reasonable cost.
8 Over time, this focused approach to asset investment decisions, process
9 standardization, and how we perform our core utility work will result in a culture of
10 continuous improvement and enhanced reliability, safety, service delivery and
11 overall efficiency.

12
13 While historically Vectren South has operated efficiently, we continue to strive to
14 increase our financial and operational efficiency by optimizing the deployment of
15 our workforce and capital assets. Moreover, as described elsewhere in my
16 testimony, as part of responding to the loss of so many skilled and experienced
17 older workers, Vectren seeks to become as efficient as possible so that
18 replacement workers have every advantage as they take on their roles of
19 providing quality service.

20
21 **Q. Please describe how AMT works.**

22 A. The AMT initiative allows Vectren South to review many related work practices
23 and maintenance programs that inherently link to capital investment
24 management. Work management efforts using the AMT technology
25 implementations, over time, will be expanded to include additional work types.
26 Facility analysis will begin to occur as more information is gathered on work
27 practices and work volume. Overall organizational design will be assessed as
28 more information is gathered on the technology and process changes
29 contemplated by AMT. Pro-active, preventative maintenance programs will be
30 designed for asset longevity. AMT will become the foundation for a continuous
31 improvement model at Vectren South.

32
33 **Q. Is the AMT initiative complete at this time?**

1 A. No. The AMT project is in its early stages. Our early improvements have been
2 driven by policy, and maintenance practice changes. Additional technology and
3 technology enablers are not yet deployed. The current projected schedule
4 includes the roll out of additional technology and process improvements over a
5 period of three years, and with all such changes, there will be a learning curve in
6 order to achieve the desired benefits.

7
8 **Q. Does the AMT initiative impact engineering considerations and the timing**
9 **of transmission and distribution asset maintenance and replacement?**

10 A. Yes. We are early in the process of developing these strategies, partly because
11 the system is not yet fully deployed and partly because of the need for some
12 additional engineers to help formulate the strategies. As part of AMT, Vectren
13 has undertaken the effort to formulate strategies for asset management in our
14 transmission and distribution systems. A detailed analysis of the transmission
15 and distribution system to determine component performance and evaluation of
16 the results of that study will be used to optimize maintenance work schedules,
17 inspection interval schedules, improve asset performance, and optimize asset
18 placement and design.

19
20 **Q. Do you anticipate this aspect of AMT will be successful?**

21 A. Yes. The engineering aspects of asset management are fundamental to
22 improving asset utilization and optimization. The asset management system will
23 allow us to link our operation, maintenance and capital costs to our specific
24 assets which will provide valuable information about our assets and allow us to
25 develop effective strategies to improve our assets and thus improve the
26 performance, reliability, safety and operation of our systems.

27
28 **Q. Are you aware of other instances where AMT has been deployed in this**
29 **manner and proven successful?**

30 A. Yes. Asset management systems and processes are deployed at many utilities.
31 Specifically, Vectren visited companies such as Keyspan, Columbia Gas, and
32 Atlanta Gas Light to review their system and process implementations. This
33 allowed us to review the benefits they have received since the implementation

1 and discuss ideas around strategy development and asset optimization. There
2 are many others throughout the industry who also have begun similar AMT
3 deployments.

4
5 **Q. Will the application of AMT to transmission and distribution assets and**
6 **maintenance require additional employees?**

7 A. Yes. Two electric system planning engineers are needed to conduct the detailed
8 analysis of system status, system planning and component performance and
9 assist in development of programs that will optimize the timing of asset
10 inspection, replacement, location, and design. The cost of those two employees
11 after allocating 40% to capital costs is \$140,000 annually and is included in
12 Petitioner's Exhibit MSH-2, Adjustment A21.

13
14 An asset planning engineer will also be required. This engineer will be
15 responsible for analyzing specific asset performance, formulating operation and
16 maintenance strategies and capital replacement and expansion strategies, and
17 evaluating the effectiveness of those strategies. Additionally, this position will be
18 responsible for identifying, reviewing and implementing new technologies that will
19 support our asset strategies. The annual expense of this employee will be
20 \$66,780 and is included in the amount shown Petitioner's Exhibit MSH-2,
21 Adjustment A21.

22
23 **Q. Please provide some background information on the pro forma adjustment**
24 **to include costs associated with enhancing mobile technology.**

25 A. As part of the AMT initiative specific to the Work Execution track of the project
26 Vectren Energy Delivery will be deploying an additional 350 mobile devices, a
27 140% increase in units currently in service. In addition, 75 units currently in
28 service will be replaced by units with multi-communications capability. Mobile
29 units have greatly increased field workforce productivity by allowing technicians
30 to interface directly with support systems and customer data.

31
32 In addition, Automatic Vehicle Locating (AVL) will be deployed in the Energy
33 Delivery vehicles equipped with mobile devices. AVL utilizes Geographic

1 Positioning Satellite (GPS) technology to allow Vectren South to locate its
2 vehicles and employees instantly over its geographically dispersed region. It
3 also allows Vectren South to assign the geographically closest resources to its
4 customer or system needs.
5

6 **Q. What resources will be needed to deploy this new technology effectively?**

7 A. Vectren South must add a System Administrator, an IT Desk Technician, and a
8 Programmer Analyst to effectively install, operate equipment, train users, and
9 maintain the new equipment. The non-labor portion of the cost allocated to
10 Vectren South-Electric operations is \$86,985. The labor portion of this pro forma
11 adjustment is \$16,495. In total, the costs allocated to Vectren South-Electric are
12 \$103,480 as shown on Petitioner's Exhibit MSH-2, Adjustment A54.
13

14 **Q. While in its early stages, has the AMT initiative produced any benefits?**

15 A. Yes. As described above, by its nature, AMT will roll out technology over time
16 and, factoring in the associated training period, Vectren South will see benefits
17 over the longer term. AMT programs implemented throughout the utility industry
18 are realizing benefits in the area of capital investment strategies – again
19 accomplished through more standardized engineering design processes and
20 more efficient work execution. In addition to capital management savings, longer
21 term savings are being realized across the industry in the operating and
22 maintenance areas of the utility as well due to focused capital investments on
23 those assets costing the most to maintain. Vectren believes opportunities exist
24 for both reduced capital costs in our selection and execution of work and, over
25 time, the potential for reduced operating and maintenance costs as we better
26 target our future capital decisions. Vectren also believes that other work
27 practices and processes will benefit from AMT by proliferating best practices
28 occurring within Vectren.
29

30 **Q. Has the AMT initiative yielded savings included in this rate case?**

31 A. Yes. The initial cost reductions of \$(35,923) have been estimated and are
32 reflected on Petitioner's Exhibit No. MSH-2, Adjustment A55.
33

CUSTOMER CONTACT CENTER

Q. Please describe the Vectren customer contact center.

A. Constructed in 2001, Vectren's customer contact center in Evansville is the telephone call center for all Vectren Energy utility operations. There are over 180 customer representatives located in Evansville. Vectren has contracted with an outside contractor who provides another 70 call handlers. The contact center handles customer calls and on-line inquiries regarding emergencies, power outages, billing, service, disconnection, payment arrangements, and information inquiries. The contact center also handles inquiries from assistance agencies, township trustees, and other support services groups in coordinating assistance for their constituents that are Vectren customers. The contact center has a special assistance group to handle calls from and promptly provide information to the Indiana Utility Regulatory Commission's Consumer Affairs Division.

Q. Has the level of customer calls increased?

A. Yes. From 1,981,735 in 2002, the number of annual customer calls has increased each and every year. In 2005 the customer contact center received 2,930,301 calls. Call volume thus far in 2006 is trending very close to 2005 levels. We anticipate that we will soon roll out our conservation programs that should further increase call volumes.

Q. In your opinion, why have call levels increased so much?

A. A primary cause is the increase in the energy commodity costs. Throughout this period, customers experienced more volatile and frequently higher commodity costs. Prior heating season energy costs and warnings issued regarding high energy costs in the 2005-2006 heating season have resulted in increased customer inquiries. Vectren conducted a vigorous media campaign preceding the 2005-2006 heating season to inform customers of high natural gas prices, encourage them to participate in our budget billing program, and practice energy conservation. Increased energy costs have resulted in higher call volumes

1 regarding budget billing, payment arrangements, disconnection notices,
2 disconnections, reconnections, and payment assistance programs.

3
4 **Q. How effective were efforts to encourage enrollment in budget billing in**
5 **Vectren South?**

6 A. They were very successful. There was an unprecedented increase in budget bill
7 enrollment of 88% from 9/01/2005 to 3/31/2006.

8
9 **Q. What payment assistance programs have added to call volumes?**

10 A. A significant number of customers called during the heating season asking for
11 information and to enroll in Indiana's new Help Thy Neighbor program. Vectren
12 processed over 6,200 applications for the Vectren South area during this
13 assistance campaign. Customers also called asking for information regarding
14 Vectren's Share the Warmth program, Universal Service Program, the LIHEAP
15 program, and assistance that may be available from community action and social
16 agencies.

17
18 **Q. How important are the services of the contact center?**

19 A. Customer contact is critical to customer satisfaction, efficient operation of the
20 utility and other regulatory stakeholders.

21
22 The contact center is the primary channel through which customers provide and
23 receive information regarding service transactions, billing issues and payment
24 services. That flow of information needs to be prompt and accurate in order to
25 satisfy the needs of customers. Without prompt and accurate communication
26 between the customer and the utility, unpaid balances increase, disconnection
27 levels increase, and customer needs and concerns are not fully addressed.

28
29 **Q. Have additional contact center employees been added to meet the needs of**
30 **Vectren South-Electric' customers?**

31 A. Yes. The customer call center staff consists of a professional, hardworking and
32 dedicated group of individuals. We monitor the productivity and performance
33 levels both at the center and individual agent levels of our contract call center. It

1 is simply impossible to handle the increased customer call volumes without
2 increasing call center staff. Between October 2005 and February 2006, we
3 added 25 agents in the Evansville Contact Center (first as temporary employees
4 and then hired as permanent employees in July 2006) and 35 more agents were
5 added at our outsource contractor site. These additions necessitated the
6 addition of two new Performance Assurance representatives to handle the
7 scheduling of these resources, perform call quality monitoring, and assist in their
8 training. The additional Contact Center personnel are essential to meeting our
9 workload and the needs of our customers.

10
11 **Q. Have you seen an improvement in your contact center metrics as a result**
12 **of these additional resources?**

13 **A.** Yes. An immediate improvement was realized in December 2005 over 2004
14 performance. As these agents became more efficient and the additional agents
15 were brought online in February 2006, our performance numbers have continued
16 the favorable improvement trend as indicated below:

- 17 ○ December 2004 average speed of answer (ASA) of 4 minutes 11
18 seconds
- 19 ○ December 2005 average speed of answer (ASA) of 3 minutes 23
20 seconds; This is an improvement of 19%.
- 21 ○ January 2005 vs. January 2006 saw a 33% improvement in the
22 monthly ASA. (5:10vs. 3:26)
- 23 ○ February 2005 vs. February 2006, a 22% improvement was seen.
24 (5:45 vs. 2:41);

25 This sustained improvement can best be demonstrated by looking at our May
26 2005 vs. May 2006 statistics.

- 27 ○ In May 2005, 222,728 calls were handled at an average speed of
28 answer of 2 minutes 18 seconds.
- 29 ○ In May 2006, 227,730 calls were handled at an average speed of
30 answer of 15 seconds.
- 31 ○ In fact, while handling 2% greater call volumes, an 89% improvement
32 in the speed of answering these calls was achieved.

1 These improvements have meant not only an improvement in the customer
2 experience as they attempt to reach our contact center agents, but have also
3 improved the morale of our agents and allowed us the opportunity for remedial
4 skills training in such things as telephone etiquette, showing empathy for the
5 customer, etc.

6
7 **Q. Are the new contact center employees fully reflected in the test year?**

8 A. No. Because of when they were hired, both Vectren employees and contract
9 resources, the expenses are not fully reflected in the test year. The
10 annualization of these call center costs results in an adjustment of \$157,036 as
11 shown on Petitioner's Exhibit No. MSH-2, Adjustment A44.

12
13 **REVENUE ASSURANCE**

14
15 **Q. Please describe the adjustments that Vectren South-Electric proposes to**
16 **be approved for meter reading costs.**

17 A. Every month approximately 117,500 Vectren South-Electric meters are read and
18 the readings are processed for billing. Vectren South-Electric uses contract
19 meter readers for 60% of its meters and Company personnel for the remaining
20 40%. One of Vectren South-Electric's largest contract meter reading providers
21 proposed to increase the cost of its service. In response, Vectren South-Electric
22 looked for ways to avoid the proposed increase. As a result, Vectren South-
23 Electric entered into contracts that took effect July 28, 2006 with two different
24 contract meter reading companies. By doing so we avoided a much larger
25 increase in the cost of meter reading and obtained more favorable contract
26 terms. The new meter reading contracts require only a 1.5¢ increase per meter
27 read. Part of the increase in contract meter reading expense is also driven by an
28 approximate 2% annual increase in the number of meters read. This increase in
29 the number of meters is the result of new construction and transitioning meter
30 reading routes from Company personnel to contract readers through attrition.

31
32 **Q. Does Vectren South plan to continue using contract meter readers in the**
33 **future?**

1 A. Yes. We will continue to rely upon contract meter reading in the future.

2
3 **Q. What is the additional annual expense resulting from increased contract**
4 **meter reading rates and other costs?**

5 A. The annual increase for Vectren South-Electric is \$39,467 as reflected in
6 Petitioner's Exhibit No. MSH-2, Adjustment A41.
7

8 **Q. Apart from the meter reading incentives described above, does Vectren**
9 **South propose to expand other efforts to deal with fraud and theft of utility**
10 **services?**

11 A. Yes. The level of utility service theft is a serious problem that has increased
12 significantly in recent years. Vectren South will hire a new employee to perform
13 field confirmation of instances of suspected utility service fraud, theft, bypassing
14 or tampering. This individual will be specific to the Vectren South system and
15 primarily focus on the electric system. When instances of suspected fraud theft
16 or tampering are encountered by meter readers or suspected by our billing
17 department due to usage anomalies, this employee will be advised.
18

19 **Q. Upon being advised of instances of suspected fraud or theft, what will this**
20 **employee do?**

21 A. This employee will review our records to see if the customer's billing history
22 supports a suspicion of fraud or theft. The employee may speak with meter
23 readers or other Vectren representatives to determine if there is any other
24 information useful to the investigation. The employee will also make a field visit
25 to the location to inspect and document the meter condition or any bypassing
26 connections.
27

28 **Q. What is the benefit of this new employee?**

29 A. The employee will provide assistance that Vectren needs in reducing stolen utility
30 services. This decreases operating expense for lost service and bad debt which
31 ultimately are born by our customers.
32

33 **Q. What is the annual cost of this fraud and theft employee?**

1 A. The annual expense of this new employee is \$81,806 and is included in the
2 amount shown on Petitioner's Exhibit No. MSH-2, Adjustment A21.
3

4 **CUSTOMER BILLING COSTS**
5

6 **Q. Please generally describe the work process of Vectren South-Electric's**
7 **billing center.**

8 A. Our billing system design and function is intended to operate efficiently and
9 accurately. Each month 1,176,167 meter reads are received at our billing center.
10 Of these, 149,692 are attributable to Vectren South-Electric customers. Meter
11 readings are received electronically from throughout our service territory. Once
12 received, the meter reads are entered into the billing system. Consumption is
13 calculated and compared with established parameters, and usage outside those
14 parameters results in an exception report. The billing group researches the
15 exceptions and must clear them before a bill is generated. Once the bills are
16 generated, they must be processed for mailing and mailed. All of this must be
17 accomplished within a two-day window in order to provide the bills to customers
18 on a timely basis.
19

20 **Q. What changes in the customer billing department have occurred that**
21 **should be addressed in this proceeding?**

22 A. The workload in several areas of billing has increased substantially as have
23 certain expense levels. First, the 5.4% postage increase that became effective
24 January 1, 2006 requires an annual adjustment of \$20,715 as allocated to
25 Vectren South-Electric. This covers the increased cost of mailing bills to
26 customers. According to the U.S. Postal Service website, an additional 7.7%
27 increase will become effective during the spring of 2007. That upcoming
28 increase is not currently reflected in proposed rates but may occur before the end
29 of the pro forma period. This increase is reflected in Petitioner's Exhibit No.
30 MSH-2, Adjustment A42.
31

32 Second, Vectren South intends to hire 9 new employees to fill a variety of roles in
33 the billing area. Over the past 6 years, we have made substantial investment in

1 our Customer Information and Billing System. This system has improved
2 processes and access to data. Now, with increasing demands on employee time
3 due in part to customer issues related to high gas costs, as well as efforts to
4 improve quality, we have determined that the additional employees in the billing
5 area that will work with our systems will add value and benefit our customers.
6 The jobs are as follows:

7
8 Administrator of Deposits. This position will administer and oversee the deposit
9 process which includes deposit adjustments, transfers, refunding customer
10 deposits as required per the Commission's customer deposit rules, and properly
11 accounting for customer interest earned. Currently no particular employee is
12 assigned to oversee the deposit process. The number of Vectren South-
13 Electric's customer deposits to be handled doubled from 2002 to 2005 resulting
14 in a periodic backlog of deposit work. The current heavy level of work in this
15 area will continue in the future. In order to fulfill those functions on a timely basis,
16 an additional full time employee is necessary.

17
18 Incomplete Disconnections for Nonpayment. An additional full time employee is
19 required to administer the disconnection of customer service for nonpayment.
20 Vectren South works closely with customers to help them budget their bill
21 payments, to structure payment plans for customers in arrears, to provide
22 heating assistance through Help Thy Neighbor, Share the Warmth, LIHEAP, and
23 financial assistance through social and community action agencies. Vectren
24 South has been both diligent and successful in helping customers address bill
25 payment problems and continue utility service. Unfortunately, there are
26 instances when disconnection for nonpayment is necessary. Disconnection for
27 nonpayment is often a difficult task. Disconnection is sometimes delayed
28 because field representatives cannot gain access to the premises, requiring that
29 the disconnection be rescheduled. Contacting the customer in order to gain
30 entry for disconnection can also be difficult. Landlord- tenant relationships and
31 the use of false customer identities can complicate and delay disconnections.
32 Disconnections that cannot be completed only contribute to increasing bad debt
33 expense and unrecoverable consumption which ultimately is borne by the other

1 customers. The job of the new full time employee is to locate and contact the
2 responsible customer party, reschedule all incomplete disconnections, make
3 arrangements for entry into the premises and minimize the number of incomplete
4 disconnections. Adding a person to administer the incomplete process of
5 disconnection at the meter helps avoid the more expensive alternative of digging
6 the service line and installing a valve. In addition, this option reduces bad debt
7 expense as well as may assist in reducing the need for a more expensive
8 solution to the problem.

9
10 Fraud and Theft Invoice Employee. All fraud and theft billing is performed by
11 Customer Billing. During 2006, Credit and Collections added two employees to
12 investigate fraud and theft accounts. With two additional resources identifying
13 fraud incidents and completing investigations, the increased volume of fraud and
14 theft investigations has overwhelmed Customer Billing and they are unable to bill
15 these accounts in a timely manner. Also, most fraud and theft cases require
16 manual bills which are labor intensive. The additional support will allow more
17 timely billing of fraud and theft Invoices and help decrease bad debt expense.
18 For the period January through July 2005, the total number of fraud and theft
19 investigation orders billed was 1,451 and in 2006 was 2,794, for an increase of
20 approximately 92%. The increased workload in this area requires the new
21 fulltime employee. In addition, two fulltime employees are added to focus on
22 service diversion and identity fraud cases.

23
24 Automatic Transfer Order Agreements (ATO) ATO's are typically agreements
25 whereby nonpayment of a tenant's utility bill automatically transfers the bill into
26 the name of the landlord. Our ATO workload has increased to the point that a
27 new fulltime employee in this area is required. ATO contracts have increased
28 approximately 10% overall for Vectren South and require more than one person
29 to keep the work current. With more, large apartment owners utilizing the ATO
30 service, the number of contracts along with the number of services covered by
31 the contract has increased. Numerous accounts on one contract require more
32 time to process. Initiating the ATO agreements and transferring the bill in
33 situations of voluntary or involuntary (shut-off for non-payment) disconnection of

1 service to the landlord provides a customer service, avoids multiple calls from
2 individuals moving in and out of these properties, and avoids the potential for
3 damage if service is shut-off without notifying the property owner.

4
5 Billing Quality Specialists Because the billing function is dynamic and is required
6 to adapt to process changes regularly, a dedicated trainer/quality assurance
7 specialist is needed to ensure that the Billing group is operating efficiently. This
8 additional fulltime employee is proposed to help identify root causes of billing
9 accuracy issues. This employee would audit our internal billing processes,
10 detect any instances of failure to follow procedures, focus on minimizing the
11 number of re-bills and approve the accuracy of our overall billing process. The
12 employee will work within the billing group to ensure that billing processes and
13 procedures are followed to ensure billing accuracy. In addition, the employee will
14 function as Quality Specialist/Trainer with responsibilities including (1) training
15 new hires, (2) perform personal performance audits, (3) writing and updating
16 department processes and procedures and (4) performing other high level tasks
17 as assigned. The Internal Audit group has concurred that personal performance
18 audits are essential and this position would be responsible for coordinating the
19 audits.

20
21 Customer Accounting Analyst. This is an Analyst position for the Customer
22 Accounting Department. This position assists with the reconciliation of billed
23 sales and consumption and tracking key financial metrics. The analyst will also
24 be responsible for generating customer billing determinants. .

25
26 Billing Specialist or Coordinator. An employee is needed to provide support to
27 the Billing Department and assist with maintaining Department performance
28 levels. This employee will be responsible for developing and maintaining
29 Department tracking spreadsheets; monitor, report, and present monthly billing
30 issues to management; serve as a single point of contact for billing accuracy
31 issues; review and monitor revenue and consumption adjustment reports; assist
32 with development of department training documents; process requests for

1 complex billing adjustments; assist in the ongoing analysis of Billing Department
2 process and procedures; and perform other billing tasks as needed.
3

4 **Q. Is it reasonable and necessary for Vectren South to employ these**
5 **additional personnel?**

6 A. Yes. For Vectren to timely fulfill the growing responsibilities of gas customer
7 billing and assure quality in performing this function, it is necessary to hire these
8 additional employees.
9

10 **Q. What is the total expense associated with the additional billing personnel**
11 **described above?**

12 A. The annual additional expense for Vectren South is \$70,010 as included in
13 Petitioner's Exhibit MSH-2 Adjustment A21, Line 29.
14

15 **Customer Safety Education and Public Awareness**
16

17 **Q. Please describe Vectren South's customer safety and education efforts.**

18 A. Vectren South uses a variety of media to communicate safety and educational
19 information to our customers. This includes television spots, radio spots, direct
20 mail, information on our Vectren.com website, and school presentations on
21 electricity and gas safety. See Petitioner's Exhibit Nos. WSD 4-15. We also
22 participate with local police, fire departments, and emergency response teams in
23 educational public safety presentations and mock emergency drills.
24

25 **Q. What is the objective of Vectren South's efforts at customer safety and**
26 **education?**

27 A. The objective is to provide a material benefit to our customers by promoting
28 customer safety and education about the electric system, gas system, the direct
29 use of energy and equipment, and how they can safely work in and around the
30 these critical systems. The results are greater customer awareness regarding
31 the dangers of electricity and natural gas, minimizing customer risk, and overall
32 improving customer safety and knowledge.
33

1 **Q. Please describe Vectren South's paid media customer safety and education**
2 **efforts?**

3 A. In 2006 Vectren ran educational messages regarding the dangers of electrical
4 lines and how they can be avoided. Petitioner's Exhibit No. WSD-5 is a script of
5 the radio spots. Petitioner's Exhibits Nos. WSD-6 & WSD-8 are copies of a
6 newspaper free standing insert and sticky note ad which have been run to
7 promote residential safety and also provide safety information to Evansville area
8 businesses. The Company's safety education and public awareness stresses the
9 traditional safety themes of avoiding power lines, call before you dig, avoiding
10 flooded areas, and appliance safety.

11
12 In addition to these traditional message safety themes, Vectren South also is
13 educating customers on how to respond to power outages. As part of our "Power
14 On" campaign, these simple, PSA-like TV and radio spots focus on educating
15 customers on the most efficient way to respond when their power goes out. The
16 campaign also featured a direct mail magnet that would give the customer the
17 opportunity to have the easy steps on home refrigerators or next to phones. The
18 direct mail campaign cost approximated \$55,000. See Petitioner's Exhibit Nos.
19 WSD-7 & WSD-12.

20
21 **Q. Has Vectren South developed additional television, radio, and newspaper**
22 **communications to convey safety information on energy usage and energy**
23 **equipment for 2007?**

24 A. Yes. Petitioner's Exhibit No. WSD-13 contains an outline of the education
25 campaign we plan to run beginning in early 2007. The 2007 safety/reliability
26 campaign is projected to cost \$175,000.

27
28 **Q. Does Vectren South plan a direct mail program for 2007?**

29 A. Yes. Each electric customer will receive a direct mailing bill insert providing
30 information on how customers can better help themselves during a power
31 outage, how customers can stay safe around electric systems, and how to use
32 the PowerOn system and report outages in the most efficient way. Postal costs
33 and printing will adjust the cost of this direct mailing to \$50,000.

1
2 **Q. Please describe Vectren South's school utility safety program.**

3 A. Currently, Vectren South's "Discover Electricity" kindergarten program includes a
4 line truck that is setup to dramatically demonstrate to teachers and school aged
5 children the deadly heat and voltage created by electric lines. Observers are
6 able to see firsthand the devastating energy that they are exposed to when in the
7 vicinity of electric lines. Materials include a teacher's guide, student curriculum,
8 pre and post tests as well as teacher evaluation forms. The existing program also
9 includes a teacher's guide and coloring books for students. See Petitioner's
10 Exhibit No. WSD-14.

11
12 The objective of our program is to educate children about the dangers of
13 electricity, and help them understand how their actions can affect service
14 reliability. This promotes the safety of the children and instills in them knowledge
15 that they will carry forward as adults.

16
17 **Q. What improvements does Vectren South propose for its school utility**
18 **safety program?**

19 A. Going forward, we plan to expand the program to middle school-aged
20 children and their teachers. We also plan to enhance the means of assessing
21 the program's success level. Materials provided in the program will be designed
22 to not only provide information to the children in the classroom but also deliver
23 safety messages to their parents at home by including certificates of completion
24 and other materials that the student will take to the home. Cost of the new
25 program will be \$120,000.

26
27 **Q. What is the annual cost of Vectren South's customer safety education and**
28 **public awareness program?**

29 A. The annual cost is \$400,000 as shown Petitioner's Exhibit MSH-2 Adjustment,
30 A45.

31
32 **Q. Are those costs and the customer safety education and public awareness**
33 **program reasonable and necessary?**

1 A. Yes. This program provides an important material benefit to our customers. It
2 teaches our customers and their children the knowledge needed to avoid injury
3 and death from accidental exposure to electricity and natural gas. It provides
4 them with information on the safe use of electrical appliances and what to do in
5 situations of electrical or natural gas emergencies. They are made aware of how
6 to properly contact the company so that service can be restored as efficiently as
7 possible. The costs I have described are an accurate representation of the costs
8 that Vectren South will incur annually in the future.
9

Utility Plant in Service

10 **Q. Please describe Vectren South's electric facilities that are used in**
11 **connection with the provision of service to the public.**

12 A. Vectren South's electric system facilities at March 31, 2006, consisted of
13 approximately 5000 miles of conductor, 119,000 poles, 140 substations, 134,000
14 service lines and more than 142,000 meters. There are numerous transformers
15 and breakers and other equipment. There are power plants, combustion
16 turbines, buildings and other plant, fleet vehicles, and various other items of
17 property commonly used in the industry such as land, easements, materials,
18 supplies and working capital.
19

20 **Q. Please describe the overall condition of Vectren South's utility plant.**

21 A. I am personally familiar with the property, particularly the larger items. In my
22 opinion, the property is well maintained, in good condition, and is reasonably
23 necessary for Vectren South's provision of electric utility service in its service
24 area.
25

26 **Q. What procedures are in place to ensure that the amount reflected as utility**
27 **plant in service as of March 31, 2006 on Vectren South's books and records**
28 **represents the actual cost of utility plant in service as of that date?**

29 A. Vectren South maintains continuing property records based on a capital work
30 order procedure. Capital projects must be authorized by management before

any costs are incurred and construction begins. Capital investment is also controlled by an investment budget schedule approved and maintained by the Company's officers and Board of Directors. The construction work order procedure assures that the cost of new construction is not transferred to utility plant in service until verification that the work is completed and in service. This verification is accomplished when field operating personnel submit to plant accounting a report listing the actual quantities of the property units installed. Similarly, Vectren South has a retirement work order procedure that assures property is removed from utility plant in service when the plant accounting department, upon receipt from field operations, processes documentation that the retirement work is completed.

Q. What is the amount of Vectren South's utility plant in service as of March 31, 2006?

A. Utility plant in service, net of accumulated depreciations, as of March 31, 2006 totals \$935,584,834 as shown in Petitioner's Exhibit No. MSH-2, Adjustment 65, page 2 of 3.

Q. Does the pro forma rate base as of March 31, 2006, shown in Petitioner's Exhibit No. MSH-2, Adjustment 65, page 2 of 3, include an adjustment for projects that will be completed after that date?

A. Yes. The pro forma rate base also includes a collection of electric transmission and substation projects estimated at a cost of \$16,977,000. This reflects the projected cost of 12 projects that represents an improvement to our electric transmission system to improve reliability and import capabilities to deliver reliable service to the Vectren South customer base. These projects are underway and are expected to be in service by no later than October 1, 2006. The pro forma rate base also includes an estimate of \$49,000,000 related to the addition of a fabric filter at Culley Unit 3. This project is discussed further by Vectren South Witness Ronald G. Jochum.

Q. Please explain why the electric transmission and substation projects are necessary to provide reliable service to the Vectren South customers.

1 A. These projects were necessary in order provide the required electric
2 transmission and substation capacity to serve the growing load internal to the
3 Vectren South electric system, to increase Vectren South's import capability and
4 to meet the North American Electric Reliability Council and Reliability First
5 Corporation planning and operating requirements, and to improve upon the
6 reliable delivery of electricity to Vectren South's customers. As a result of
7 internal system load growth and increased cross system flows, facilities were
8 identified that would exceed their maximum rating and in some cases limit
9 Vectren South's import capability. Import capability is important to customers in
10 situations where internal generation cannot meet internal demand. These
11 electric transmission and substation projects were necessary to correct the
12 identified overloaded facilities and in some cases increase import capability. In
13 addition, some of these projects were required to replace facilities that were at
14 the end of their useful life and will improve upon the reliable delivery of electricity.
15 Vectren South witness Michael W. Chambliss will testify to further proposed
16 transmission system improvements.

17
18 **Q. How was the estimated cost of \$16,977,000 determined?**

19 A. We designed the projects internally, drawing upon our experience with similar
20 projects and incorporating prevailing material and labor rates. In my opinion, this
21 is a reasonable estimate based on current information. The actual costs will be
22 submitted when the projects are completed.

23
24 **Q. Have you reviewed the current calculation for Vectren South-Electric's Rate
25 Base?**

26 A. Yes. Petitioner's Exhibit No. WSD -15 demonstrates that Vectren South-
27 Electric's Total Rate Base as of March 31, 2006 is \$1,017,759,887.

28 **Q. How does the current plant in service compare to the plant in service at the
29 time of Vectren South-Electric's last rate case?**

30 A. Petitioner's Exhibit No. WSD-16 demonstrates that since December 31, 1993,
31 Vectren South-Electric's plant in service has increased by \$443,244,406. Of this

1 amount, \$234,578,328 represents the net electric investment in pollution control
2 equipment at our generating facilities. The remaining amounts were primarily
3 driven by installations of other system enhancements, necessary to ensure
4 ongoing service quality and reliability, the replacement of existing facilities to
5 ensure the continued provision of reliable service to existing customers, and
6 increases in facilities required to serve new customers.

7 **Q. Does this conclude your testimony?**

8 **A. Yes.**

13.11%

Energy Delivery Potential Adjustments to Test Year Spending Level - Evansville Region - Electric							* indicates 10% admin cost included.
Project Name	ABM	Income Statement	FERC	Sustain	Est. Cost	Electric Allocated	Detailed Description
(1) Electrical Apprenticeship Training Implementation	TRAINING	A23	588	S	\$ 136,500	\$ 136,500	Assumes outsourcing of annual apprenticeship training of 23 new line specialist apprentices at \$6K per year and training of 3 new electrician apprentices at \$3.5K per year. Assumes training will be outsourced.
(2) Electrical Apprenticeship Training Development	TRAINING	A23	588		\$ 30,000	\$ 30,000	External resources for electric training and training developments - includes external trainers, materials, travel, course development, assessment, resource planning and other items. 3 year program.
(3) Electric Supervisor	ENGR, SUPV & PLAN	A23	590 580	S	\$ 66,780	\$ 66,780	Addition of a supervisor to manage incremental headcount. \$60K labor, loaded at 59%, 70% allocated to O&M
(4) Training Manager	TRAINING	A23	588	S	\$ 126,564	\$ 16,593	Hire a Manager of Training to develop strategic training plan for all electric training with associated safety training. Has ownership over develop of training plan, employee progression, record keeping; \$79.6K (plus loadings) allocated among all company
(5) Electric Technical Training Consultants	TRAINING	A23	588	S	\$ 190,800	\$ 190,800	Internal resources for electric training - labor, materials, travel, course fees and other similar items. Including management of all external training resources, administration and record keeping. 2 resources at \$60K (plus loadings)
(6) Hire 8 Line Specialist	Elec T&D Lines	A23	571	S	\$ 54,128	\$ 54,128	8 FTE Line Specialist Apprentices 70% O&M (80% Distr, 20% Transm; 30% Oper, 70% Mtce=50% OVH, 25%URD, 25% Transformer). \$21.66/hour for the first six months, \$22.28/hour for the second six months
(7) Apprentices to cover upcoming retirements	Elec T&D Lines	A23	593	S	\$ 108,255	\$ 108,255	
(8)	Elec T&D Lines	A23	594	S	\$ 54,128	\$ 54,128	
(9)	Elec T&D Lines	A23	595	S	\$ 54,128	\$ 54,128	
(10)	Elec T&D Lines	A23	563	S	\$ 23,198	\$ 23,198	
(11)	Elec T&D Lines	A23	583	S	\$ 46,395	\$ 46,395	5 FTE Line Specialist Apprentices 70% O&M (80% Distr, 20% Transm; 30% Oper, 70% Mtce=50% OVH, 25%URD, 25% Transformer). \$21.66/hour for the first six months, \$22.28/hour for the second six months
(12)	Elec T&D Lines	A23	584	S	\$ 23,198	\$ 23,198	
(13)	Elec T&D Lines	A23	583	S	\$ 23,198	\$ 23,198	
(14) Hire 3 Line Specialist	Elec T&D Lines	A23	571	S	\$ 14,457	\$ 14,457	
(15) Apprentices to cover 25% attrition factor	Elec T&D Lines	A23	593	S	\$ 28,914	\$ 28,914	
(16)	Elec T&D Lines	A23	594	S	\$ 14,457	\$ 14,457	Costs to initiate and maintain reliability and maintenance programs until newly hired apprentice line specialists are qualified (minimum of 4 years). 70% O&M at \$64.34/hour and 1880 hours worked annually per contract lineman. (80% Distr, 20% Transm; 30% Oper, 70% Mtce=50% OVH, 25%URD, 25% Transformer). \$21.66/hour for the first six months, \$22.28/hour for the second six months
(17)	Elec T&D Lines	A23	595	S	\$ 14,457	\$ 14,457	
(18)	Elec T&D Lines	A23	563	S	\$ 6,196	\$ 6,196	
(19)	Elec T&D Lines	A23	583	S	\$ 12,392	\$ 12,392	
(20)	Elec T&D Lines	A23	584	S	\$ 6,196	\$ 6,196	
(21)	Elec T&D Lines	A23	583	S	\$ 6,196	\$ 6,196	2 Substation Electrician Apprentices 70% O&M (60% Distr, 40% Transm; 90% Mtce, 10% Oper). increased by 3.5% for wage increase.
(22) Contract Labor for 4 line specialist FTEs to perform work until the apprentices are fully qualified.	Elec T&D Lines	A23	571	S	\$ 47,517	\$ 47,517	
(23)	Elec T&D Lines	A23	593	S	\$ 95,034	\$ 95,034	
(24)	Elec T&D Lines	A23	594	S	\$ 47,517	\$ 47,517	
(25)	Elec T&D Lines	A23	595	S	\$ 47,517	\$ 47,517	
(26)	Elec T&D Lines	A23	563	S	\$ 20,364	\$ 20,364	Retirements expected in the test year based on the age of 62; calculated at the fully trained line specialist rate of \$28.57
(27)	Elec T&D Lines	A23	583	S	\$ 40,729	\$ 40,729	
(28)	Elec T&D Lines	A23	584	S	\$ 20,364	\$ 20,364	
(29)	Elec T&D Lines	A23	583	S	\$ 20,364	\$ 20,364	
(30) Hire 2 Substation Electrician Apprentices	SUBSTATIONS	A23	570	S	\$ 51,143	\$ 51,143	
(31)	SUBSTATIONS	A23	592	S	\$ 76,715	\$ 76,715	Prepare, provide information, and educate substantial portions of the workforce to transition to retirement. Subject matter will include financial planning, insurance issues, and health care concerns. Assume annually 200 participants initially at \$250 each
(32)	SUBSTATIONS	A23	562	S	\$ 5,683	\$ 5,683	
(33)	SUBSTATIONS	A23	582	S	\$ 8,524	\$ 8,524	
(34) Reduction Due to Retirements	Elec T&D Lines	A23	571	S	\$ (231,710)	\$ (231,710)	
(35) Supervisor Retirement Impact		A23	580/580		\$ 34,969	\$ 34,969	
(36) Engineering Co-op Program	ENGR, SUPV & PLAN	A23	560/580	S	\$ 21,942	\$ 21,942	Implement an engineering co-op program including 2 electric co-ops during each semester; \$23K/co-op (loaded at 59%) 30% O&M
(37) Contract Labor for 1 Substation Electrician	SUBSTATIONS	A23	570	S	\$ 21,013	\$ 21,013	1 Substation Electrician contractor 70% O&M (60% Distr; 40% Transm; 90% Mtce, 10% Oper). increased by 3.5% for wage increase.
(38)	SUBSTATIONS	A23	592	S	\$ 31,520	\$ 31,520	
(39)	SUBSTATIONS	A23	562	S	\$ 2,335	\$ 2,335	
(40)	SUBSTATIONS	A23	582	S	\$ 3,502	\$ 3,502	
(41) HR - Retirement education and Planning		A23	923	S	\$ 100,000	\$ 33,440	
(42) HR - Safety and Training Employee Relations Consultant		A23	923	S	\$ 128,090	\$ 64,045	Support and ensure regulatory compliance with mandatory safety training, safe operating procedures, new hire safety orientation and accomplishing corporate goal of Best in Class safety performance. (50% to VEDS Electric)
(43) HR - Safety projects and implementation		A23	923	S	\$ 175,000	\$ 87,500	Annual funding to ensure compliance and education of new employees and projects. Expanded apprentice programs, testing, OSHA and DOT requirements. (50% to VEDS Electric)
(44) HR - Recruiting and Employment		A23	923	S	\$ 125,000	\$ 41,800	Replacing retirements that are anticipated to grow at 3x of current rate. Additional use of search firms to recruit. (33.44% to VEDS Electric)
(45) HR - Diversity		A23	923	S	\$ 150,000	\$ 50,160	Hiring opportunities resulting from aging workforce present hiring opportunities to diversify the workforce. Will need recruiting assistance from search firms. (33.44% to VEDS Electric)
(46) HR - Training		A23	923	S	\$ 250,000	\$ 83,600	Additional training programs and consulting support to develop and administer training requirements for new members of workforce. (33.44% to VEDS Electric)
(47) HR - Specialist-Recruiting and Employment		A23	923	S	\$ 47,700	\$ 15,951	Anticipated increased recruiting and hiring due to the aging workforce will required support for the Employment Recruiter. (33.44% to VEDS Electric)
(48) HR - Specialist-Training		A23	923	S	\$ 47,700	\$ 15,951	Incremental headcount to administer increased training requirements of new hires and those in new roles. (33.44% to VEDS Electric)
(49) HR Generalist Support of Workforce Transformation		A23	923	S	\$ 94,287	\$ 31,530	New employees and transformational issues will increase the need for HR expertise and support of change activities. (33.44% to VEDS Electric)

Vectren Energy South - Electric
Aging Workforce
Test Year Ended March 31, 2006

VEDS Energy Delivery - Bargaining-Unit Workforce
Retirement Schedule Based-On Age 62

Job Classification	# of Active BU Employees as of 6/23/06	2007 Planned Hires associated with the Aging Workforce Issue		# Likely to Retire (Age > 62)									
		Planned 2007-2010 Replacements	Apprenticeship Attrition Allowance	2007 - 2010		2011 - 2014		2015 - 2018		2019 - 2022		2023 - 2026	
				# Retiring	%	# Retiring	%	# Retiring	%	# Retiring	%	# Retiring	%
Attendant.Utility	14			2	14%	1	7%	4	29%	5	36%	2	14%
Cable Splicer.	3			0	0%	0	0%	1	33%	0	0%	1	33%
Collector.	2			0	0%	0	0%	0	0%	0	0%	1	50%
Electrician.	16	2	N/A	1	6%	1	6%	6	38%	4	25%	3	19%
Fitter.	36	2	N/A	0	0%	2	6%	10	28%	5	14%	11	31%
Ground Utility Attendant.	3			0	0%	0	0%	1	33%	0	0%	0	0%
Janitor.	1			0	0%	1	100%	0	0%	0	0%	0	0%
Lead.Construction/Maintenance	2			1	50%	0	0%	0	0%	0	0%	1	50%
Line Clearance Specialist.	2			0	0%	0	0%	0	0%	0	0%	2	100%
Line Specialist.1st Class	53	8	5	7	13%	6	11%	9	17%	13	25%	10	19%
Master Mechanic.	10			0	0%	2	20%	2	20%	2	20%	3	30%
Material Specialist Helper.1st Six Mo	1			0	0%	0	0%	0	0%	1	100%	0	0%
Meter Mechanic.	1			0	0%	1	100%	0	0%	0	0%	0	0%
Meter Prover.	1			0	0%	0	0%	0	0%	0	0%	0	0%
Meter Reader Collector.	3			0	0%	0	0%	1	33%	1	33%	1	33%
Meter Reader.	9			0	0%	0	0%	3	33%	4	44%	2	22%
Meter Specialist.	5			0	0%	1	20%	2	40%	0	0%	2	40%
Specialist.General Repair	1			1	100%	0	0%	0	0%	0	0%	0	0%
Specialist.Material	7			1	14%	2	29%	3	43%	1	14%	0	0%
Specialist.Service	3			0	0%	0	0%	1	33%	2	67%	0	0%
Specialist.Trouble	10			1	10%	2	20%	3	30%	1	10%	3	30%
Technician Corrosion.	2			0	0%	2	100%	0	0%	0	0%	0	0%
Technician Service.	4			1	25%	2	50%	1	25%	0	0%	0	0%
All VEDS Energy Delivery BU Retirements	189	12	5	15	8%	23	12%	47	25%	39	21%	42	22%

Note: The highlighted Bargaining Unit Job Classifications and all Non-Bargaining Unit Supervisors are considered in the Aging Workforce Proforma

Safety Information

VECTREN.COM ENERGY DELIVERY

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[Gas Safety](#)

[Electric Safety](#)

Safety Tips

Safety is a priority at Vectren - one that our employees embrace and practice every day. Learn how you can practice energy safety by reviewing our gas and electrical safety topics.

Natural Gas Safety

Review our [Natural Gas Safety](#) topics to learn important gas safety precautions.

Find information about:

[Call Before You Dig](#)

[What if you Smell Gas?](#)

[Furnace Clean and Check](#)

[Carbon Monoxide Safety](#)

[Space Heater Safety](#)

[Pipeline Integrity Management Summary](#)

Electrical Safety

Review our [Electrical Safety](#) topics to learn important information that could help you prevent accidental injuries.

Find information about:

[Call Before You Dig](#)

[Plan Before You Plant](#)

[If You See a Fallen Power Line](#)

[Water and Electricity Precautions](#)

[Ground Fault Circuit Interrupters \(GFCIs\)](#)

[Outlet Safety Tips](#)

[Summer Safety Tips](#)

[Space Heater Safety](#)

LOG INTO VECTREN.COM

USERNAME

PASSWORD



REGISTER

[I FORGOT MY PASSWORD](#)

WSD-4

Save \$28 on your
summer electric bills.



Online bill delivery



Budget Bill

Recalculation Period

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Gas Safety

Electric Safety

Saf

Electric Safety

Every day we depend upon electricity to keep our lives running. Electricity powers our homes, offices and factories. But electricity can be dangerous in some situations.

Here are a few tips to keep you and your family safe.

Call Before You Dig

Even jobs that seem simple, such as planting a tree or installing a fence or a deck, can become dangerous and costly if an underground utility line is damaged. Please call the Indiana Underground Plant Protection Service (IUPPS) at 1-800-382-5544 at least two full working days before you dig. Utilities will locate and mark their underground lines for you free of charge. It's a simple call that can avoid serious accidents.

Plan Before You Plant

With the arrival of spring and warmer temperatures, you may be venturing outside to spice up your landscape with some new shrubs or trees. As your electric provider, Vectren wants to remind you to give careful consideration to your tree's growth characteristics to avoid future problems with nearby power lines.

Vectren's tree trimming department has come up with a few helpful tips to remember when plotting the perfect spot for your tree or shrub.

[Click here](#) for the [Plan Before You Plant brochure](#). You will need [Adobe Acrobat Reader](#) to view this brochure.

If You See a Fallen Power Line

Never come in close proximity or touch a fallen power line. Never touch anything or anyone in contact with a power line. You could be shocked by contact with the line or a secondary object or person. When a live wire touches the ground, electricity fans out in a pool, similar to when a pebble hits water, with the voltage decreasing as it travels from the center. You can be shocked when in this area. Other factors play a role in the severity of the situation, such as wet conditions and the voltage of the wire.

Reporting a Fallen Power Line**Reporting Information:**

Call Vectren Energy Delivery at 1-800-227-1376 immediately and report the location of the line. Alert your neighbors to the situation.

Call 911 if someone is in a vehicle that is touching a line. Do not approach or make contact with the person or vehicle. Wait for emergency personnel.

When Vehicles Comes in Contact with a Power Lines**If you are inside a vehicle:**

- Stay inside the vehicle and warn others to keep away.
- Wait inside the vehicle until rescue personnel arrive.
- Do not make contact with metal parts in the vehicle.

If you have to get out of the vehicle because of a fire or other danger:

- Jump out so that you do not touch the vehicle and ground at the same time.
- Don't run. Hop away keeping your feet together. Separating your feet can create two contact points with the ground and can result in a shock if the ground is energized by a fallen wire.

Water and Electricity Don't Mix

If your basement becomes flooded for any reason, do not enter unless you are absolutely certain that the water is not in contact with a source of electricity, including appliances, electrical outlets or extension cords. If you're not sure, please call a

qualified electrician.

Never leave plugged-in appliances where they might come in contact with water. If a plugged-in appliance falls into water (such as a hair drying in a bath tub), DO NOT reach in the water to pull it out - even if it is unplugged. Unplug the appliance before removing it. If an appliance has gotten wet, do not use it unless it's been checked by a qualified electrician.

Ground Fault Circuit Interrupters (GFCIs)

Hundreds of people are killed or injured in their homes by electrical shock from ordinary appliances and power tools each year. By having inexpensive GFCIs installed in your electrical outlets, you can significantly reduce the risk of electrical accidents in and around your home.

GFCI should be used in any area where water may come in contact with electrical products, such as kitchens, bathrooms, garages, crawl spaces, basements, around swimming pools, and on outdoor outlets.

Although they are easy to install, you should have a qualified electrician install GFCI's in your home.

Outlet Safety

Outlets with loose-fitting plugs can over-heat and start a fire. Replace any missing or broken wall plates, and make sure safety covers are placed on all un-used outlets within reach of small children. Be sure to check for outlets behind furniture and appliances.

Do not remove the ground pin (third prong) on grounded plugs to fit a two-conductor outlet - this can lead to electrical shock. NEVER FORCE A PLUG INTO AN OUTLET.

Summer Safety Tips

- Stay away from fenced-in electric substations. Obey the signs: DANGER - HIGH VOLTAGE - STAY AWAY!
- Never fly kites near power lines. If your kite should drift toward a power line, let go of the string fast.
- Never climb trees or build tree houses near power lines.
- Never install TV antennas near a power line.
- Stay off of utility poles and any support wires or other utility equipment.
- Keep radios, hair dryers and appliances away from water.
- Don't touch any fallen power line - stay away and call Vectren immediately.
- Stay inside during thunderstorms. Lighting can kill!
- Do not stick anything other than a plug into an electrical outlet.
- Read and follow all safety instructions on electric appliances, toys, tools and equipment.
- Remember that metal ladders conduct electricity - never use them near power lines.
- Outdoor receptacles should be protected with ground fault circuit interrupters (GFCI).
- Never use electrically operated power tools in the rain or wet conditions.

Space Heater Safety

To help prevent Carbon Monoxide poisoning and fires from the use of space heaters, adhere to the following tips.

- Install and use appliances according to the manufacturer's instructions.
- Never use unvented gas or kerosene heaters in closed spaces, especially sleeping areas.
- Don't use gas appliances such as an oven, range, or clothes dryer to heat the home.
- Leave a window cracked about an inch for ventilation and fresh air. Ventilation is important to keep fuel-burning space heaters from consuming too much oxygen in the house.
- Do not leave a space heater on when you are not in the room or when you go to sleep.

Electric space heaters should be checked for signs of fraying or splitting wires or overheating. Likewise, electric space heaters frequently cause fires by overloading

electrical outlets.

- Keep space heaters away from combustible materials/products.

For more information on electrical safety, visit the [National Electrical Safety Foundation website](#).

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Community Connect



Education Programs

Safety Programs

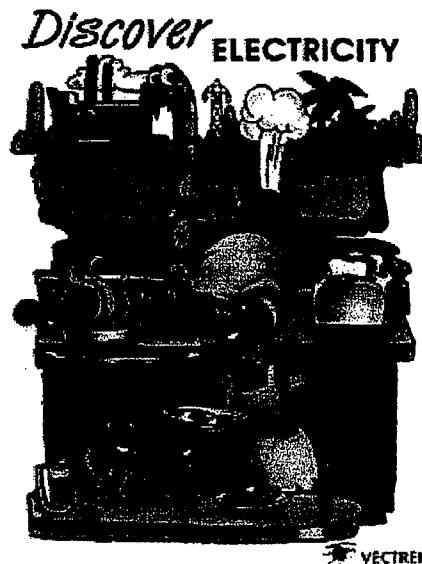
Electrical Safety Education Program

At Vectren, we are pleased to offer our resources and expertise to help educate kindergarten students about electrical safety. This program and supporting materials are provided at no cost to the school or teachers within the Vectren electric service territory.

Kindergarten Safety Program

Vectren's "Discover Electricity" program provides teachers with the materials to educate their students about electrical safety. The educational program includes a teacher's manual, student activity books, storybook and a visit from a Vectren lineman.

This program is available in the fall and the spring semesters. To learn more about this program or to request additional supplies, please contact Patricia Jackson at pjackson@vectren.com or (812) 491-4690.



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Community Connect

Education Programs

Safety Programs

Safety Programs

Vectren cares about the safety of its customers and offers safety programs to a variety of customer groups.

Electrical Safety

Vectren offers a free electrical safety seminar directed to industrial customers, contractors, emergency service agencies and large residential groups. The presentation is given by qualified Vectren line personnel featuring rules and precautions relating to high voltage equipment.

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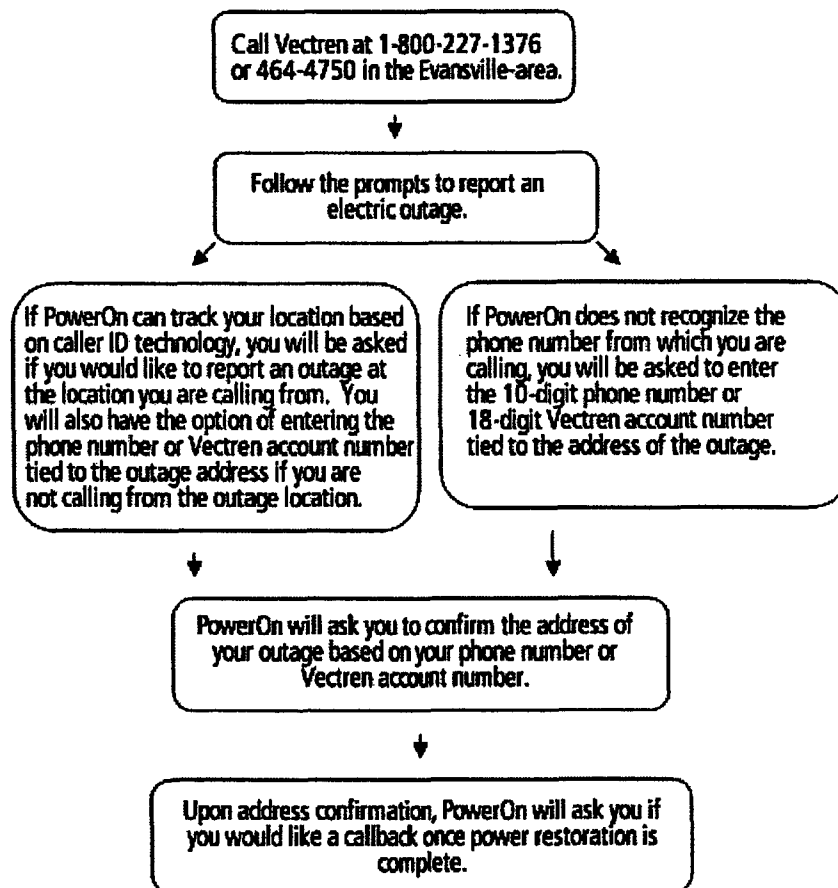
Power

PowerOn* - Vectren's electric outage response system

Vectren Energy Delivery uses PowerOn, a multi-million dollar GIS tracking and outage prioritization system to pinpoint power outages and help our crews restore power quickly and efficiently. Prior to PowerOn, Vectren could only handle 24 storm-related calls at one time. Now, the system can handle 7,500 calls an hour by using an automated data entry system. By using the automated technology, your outage is actually processed faster than if you were to wait to speak to a customer service specialist.

For your safety,
always stay away
downed power
lines. [Click here](#)
for more electric
safety tips.

Follow these steps to access PowerOn during an outage.



After you have entered and confirmed your outage, PowerOn pinpoints the portion of the electric system interrupted based on the location of reported outages. Then, a crew is dispatched to restore service. The geographic-based system also allows dispatchers to more accurately navigate crews to the locations affected.

From there, service is restored based on crew availability and outage prioritization. Finally, your PowerOn callback is automatically initiated to validate that service restoration was successful if you have requested this feature.

*PowerOn is a trademark of General Electric Company.

VECTREN 18453
30 SEC. RADIO/REVISION #1
SAFETY

ANNCR: (YOUNG BOY)

(MUSIC BED)

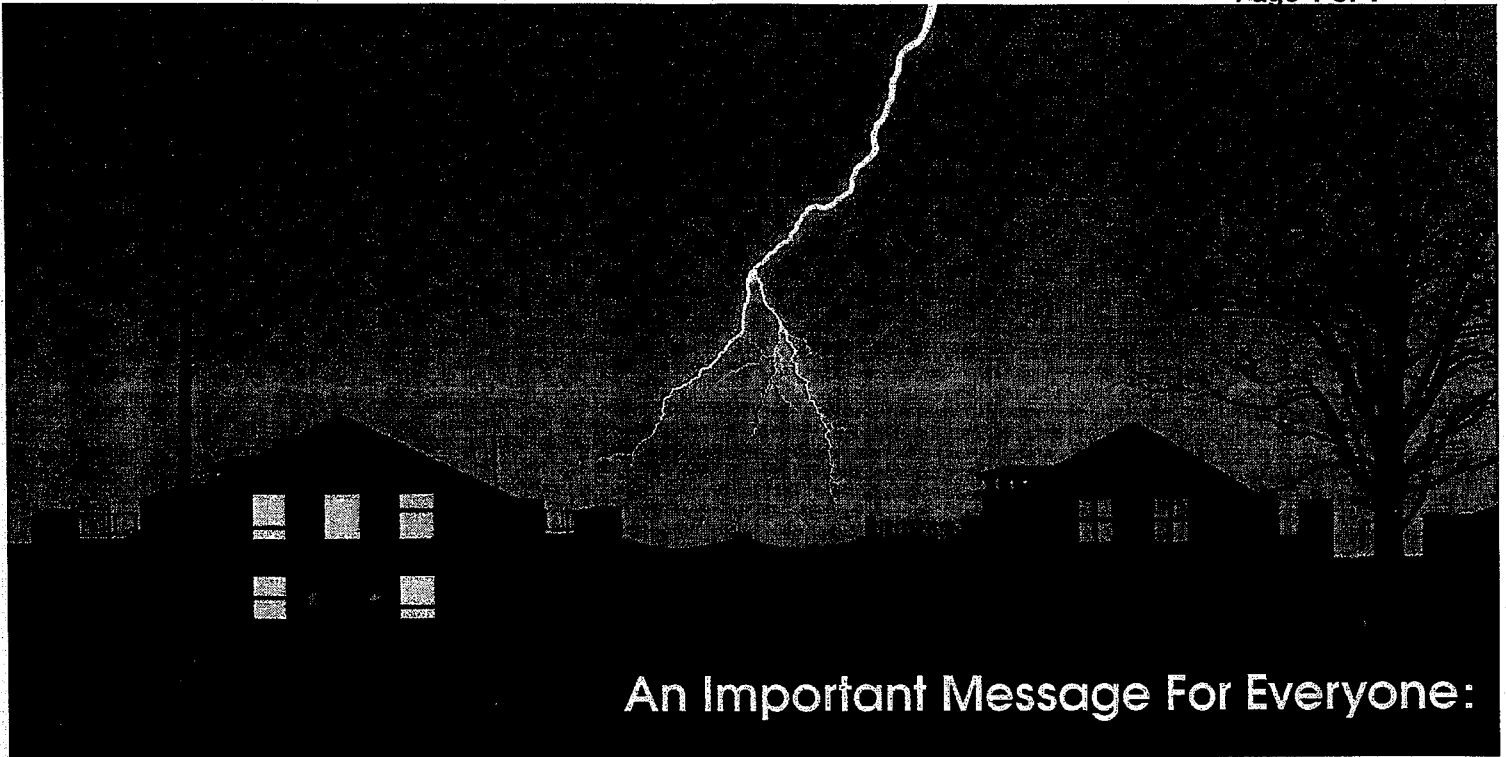
An important message for everyone:

Do you know these safety rules?

- Avoid downed power lines.
- Stay away from fenced-in electric substations.
- Never fly a kite near power lines. If your kite does drift toward a power line, let go of the string—FAST!
- Keep off utility poles, support wires and equipment.
- Stay indoors during thunderstorms. Lightning can be deadly!

Parents and kids: talk to each other about safety!

This message a service of Vectren!



An Important Message For Everyone:

Do You Know These Safety Rules?

- Stay away from fenced-in electric substations. Obey the signs: DANGER-HIGH VOLTAGE-STAY AWAY!
- Never fly a kite near power lines. If your kite does drift toward a power line, let go of the string – FAST!
- Keep off utility poles, support wires and equipment.
- Don't climb trees or build tree houses near power lines.
- Stay indoors during thunderstorms. Lightning can be deadly!
- Read and follow all safety instructions on electric appliances, toys, tools and equipment.
- Do not stick anything other than a plug into an electrical outlet.
- Never install TV antennas near power lines.
- Avoid downed power lines.

This Message a Service of



Plan Before You Plant.

With the arrival of warmer temperatures, you may be venturing outside to spruce up your landscape with new shrubs or trees. As your electric provider, Vectren wants to remind you to give careful consideration to tree growth characteristics to avoid future problems with nearby power lines.

Parents And Kids: Talk To Each Other About Safety!



Power Off?

PowerOn!*

Your Phone Keypad Is Your Power Station

To report a power outage in your home, call 1-800-227-1376.

- Choose English or Spanish
- Follow the prompts to report an electric outage
- Enter your 18-digit Vectren account number or your 10-digit phone number tied to your Vectren account
- Hang up/Vectren crews will be dispatched

PowerOn Response System



Do you know these
SAFETY RULES?

- Avoid downed power lines.
- Keep off utility poles, support wires and equipment.
- Stay indoors during thunderstorms.

For more safety tips, visit:
vectren.com



APPROVAL PROOF ONLY-NOT FOR REPRODUCTION			
Client Vectren	CV	Date	PPM Date
Job# 18476	CA	MLR 5-30-06 Date	PM Date
Item#	AD	Date	CL Date
Spec#	CW	Date	CS Date
			Spell Chk X
Flat size		Folded	
Colors 1 Control Color PMS 287			

On Yellow Stock

PowerOn!*

To report an electric power
outage in your home,

call
1-800-227-1376.



*PowerOn is a trademark of General Electric Company

APPROVAL PROOF ONLY-NOT FOR REPRODUCTION			
Client Vectren	CV	Date	PPM
Job# 18406	CA	Date	PM
Item#	AD	Date	CL
Spec#	CW	Date	CS
			Spell Chk <input checked="" type="checkbox"/>
Flat size		Folded	
Colors 1 Color PMS 287 On Yellow Stock			

Power Off?



VECTREN

PowerOn Response System
1-800-227-1376

*PowerOn is a trademark of General Electric Company



VECTREN

PowerOn Response System
1-800-227-1376

*PowerOn is a trademark of General Electric Company

VIDEO: Dark neighborhood.

SUPERS: Dark neighborhood with dim candle light.
PowerOn Response System 1-800-227-1376.

SUPERS: Dark neighborhood with bright power light.
PowerOn Response System 1-800-227-1376.
*PowerOn is a trademark of
General Electric Company

V.O.: This segment sponsored by Vectren.
Power Off?

V.O.: Use the PowerOn Response System:
To Report a power outage in your home,

V.O.: call 1-800-227-1376.

RADIO 30 SEC.
VECTREN 18404

SFX:
AMBIENT KITCHEN SOUNDS WITH DOMINANT EFFECT OF TV ON.

MALE VOICE FROM TV:
And now, with a report on the severe weather, here's meteorologist...

SFX: POWERFUL BOOM OF THUNDERCLAP.

(TV ABRUPBTLY CUTS OUT).

FEMALE ANNCR:
Power Off?

PowerOn with Vectren!

Your phone keypad is your power station!

To report an electric power outage in your home, call 1-800-227-1376.

SFX:
TONE ASSOCIATED WITH NUMBERS BEING PUNCHED INTO CELL PHONE
KEYPAD.

FEMALE ANNCR:
The automated system will give you easy-to-follow instructions for the fastest, most
efficient way to report your outage...

Then simply hang-up and Vectren crews will be dispatched.

PowerOn Response System:
A service of VECTREN!

PowerOn!

To report a power outage in your home,
call **1-800-227-1376**.

- Choose English or Spanish
- Follow the prompts to report an electric outage
- Enter your 18-digit Vectren account number or your 10-digit phone number tied to your Vectren account

▲ WRITE YOUR VECTREN ACCOUNT # HERE ▲

- If you wish, request an automated callback to confirm your power is restored
- Hang up/Vectren crews will be dispatched



VECTREN PowerOn Response System

Using Vectren's automated PowerOn system is the easiest way to report your outage. Simply write in your Vectren account number and place these near your telephones.

PowerOn!

To report a power outage in your home,
call **1-800-227-1376**.

- Choose English or Spanish
- Follow the prompts to report an electric outage
- Enter your 18-digit Vectren account number or your 10-digit phone number tied to your Vectren account

▲ WRITE YOUR VECTREN ACCOUNT # HERE ▲

- If you wish, request an automated callback to confirm your power is restored
- Hang up/Vectren crews will be dispatched



VECTREN PowerOn Response System

magnet design



VECTREN

ELECTRIC SAFETY MESSAGE 2007
Proposed Media and Creative

Date: 7/18/2006

		May				June				July						Total Cost	
		30	7	14	21	28	4	11	18	25	2	9	16	23	30		
Television	<div>WEHT TV (ABC)</div> <div>WFIE TV (NBC)</div> <div>WTVW TV (FOX)</div> <div>news25.us</div> <div>14wfile.com</div> <div>wtvw.com</div>	AM News, Midday News, 5pm News, 6pm News 10pm News AM News, Midday News, 5pm News, 6pm News 10pm News AM News, Midday News, 6pm News , 9 pm News Video Streaming Sponsor (includes 120 x 150 banner) 150 x 300 display ad 225 x 300 display ad														400 spots	\$ 75,000
Radio	<div>Metro</div>	Monday-Friday 6a-6p (plus bonus in other dayparts) WABX FM, 107.5 Classi Rock WEOA AM, 1400 Urban AC WGBF AM, 1280 News/Talk/Info WGBF FM, 103.1 Album Rock WIKY FM, 104.1 Adult Contemporary WJLT FM, 105.3 Oldies WKDQ FM, 99.5 Country WLFW FM, 93.5 Country WSTO FM, 96.1 Contemporary Hits														800 spots	\$ 15,000
Newspaper	<div>Evansville Courier & Press (Sunday)</div> <div>Boonville Standard (Wednesday)</div> <div>Mt. Vernon Democrat (Wednesday)</div> <div>Newburgh Register (Wednesday)</div> <div>Our Times (Thursday)</div> <div>Posey Co. News (Tuesday)</div> <div>South Gibson Star Times (Tuesday)</div> <div>Spencer County Journal-Democrat (Thursday)</div>															2 2 2 2 2 2 2 2	\$ 10,250
Creative and Production																\$ 75,000	
TOTAL MEDIA COST																\$ 175,250	

Persons 25+ TV/Radio

Vectren's Discover Electricity Program

Packet contents:

Pre-Test
Post-Test
Student Activity Books
Teacher's Big Book
Teacher's Guide
Program Evaluation Form
Request For Lineman Demonstration Form



If you need additional
materials, please contact
Patricia Jackson at 491-4690
or pjackson@vectren.com



VECTREN

DISCOVER ELECTRICITY




TEACHER'S GUIDE

The Discover Electricity program is designed to introduce kindergarten students to electrical safety rules and the basic concepts of how electricity affects our lives. Additionally, the program will help students develop beginning skills in the disciplines of:

- S C I E N C E
- L A N G U A G E A R T S
- S O C I O L O G Y

Through this program, students will learn electrical safety rules for both indoors and outdoors. They will also be introduced, in a simple way, to sources of energy, how electricity is made, and how we use it in our daily lives.

Several pages of this book (such as the pre-test and post-tests, the properties of electricity, vocabulary and safety rules) are designed for ease of duplication. They are marked with the symbol . This should allow you to make additional copies for use in the classroom or to send home to parents.

New terms
will be
presented
throughout this
program that
will serve
to enhance
the use
of language.

We understand that testing of kindergarten students may not be appropriate. However, we encourage you to offer the pre-lesson and post-lesson "work sheets." These are important tools for us to measure the effectiveness of the program. With your support, Vectren can continue to provide you with quality programs and materials.

Twenty-five copies of the pre-test have been provided in the instructional packet. Additional copies are available by calling (812) 491-4690.

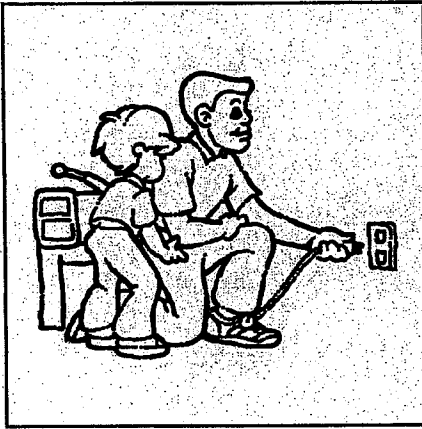
The pre-test should be given before any discussion about electricity has been conducted. Distribute the pre-test "work sheet" to the students and instruct them to place a mark on the picture showing a safe behavior. The class should follow your instruction of working one group of pictures at a time and moving to the next group upon your instruction. Collect the work sheets and record the results on the Teacher Evaluation Form.

This "test" will be repeated at the conclusion of the program, so the results of the pre-test will be important in determining the students' progress, as well as the program's effectiveness.

Discover ELECTRICITY

Pre-test

name: _____



Through the use of the "BIG BOOK," the Discover Electricity program is designed to be keyed to the following concepts:

- Safety around electricity
- How people use electricity
- Conserving electricity
- How electricity is made

The "BIG BOOK" is ideal for whole-class instruction. One page tells the story of Michael and his Mother, while the facing page presents two key vocabulary words and an illustration which helps explain the words. The book can essentially be used in three ways:

- Read the story as you show and discuss the vocabulary simultaneously
- Show only the story pages while reading
- Show only the vocabulary pages and use them as a separate lesson

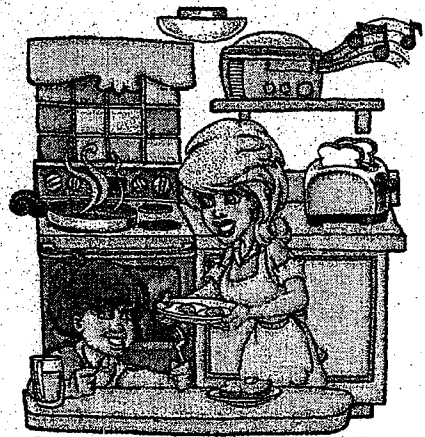
The "BIG BOOK" is a flexible teaching tool offering you a choice of ways in which it can be used.

As Michael watched his mother make breakfast one morning, he noticed that she cooked his eggs on the stove and prepared bread in the toaster, all while listening to the radio. He started to wonder, "What makes all these things work?"

So he asked his mom. "Electricity," she said.

"What is electricity?" asked Michael.

"Electricity is a form of energy," she replied. "Our bodies make energy from the food we eat so that we can work and play. Vectren provides the electricity to our homes so I can make your breakfast!"



energy electricity

THE STUDENT ACTIVITY BOOK

We wish we could offer the Discover Electricity program to every kindergarten class in our service territory at the same time, but time restrictions on our line personnel prohibit this. To resolve this, we provide the program to certain schools in the fall and the remainder in the spring. We realize the ability levels of students vary widely from fall to spring. We have tried to design the Student Activity Books with this in mind. If you find the Activity Book is too challenging for your students in the fall, we suggest using it as a review lesson in the spring — reminding students to “Play It Safe” over summer vacation.

The Student Activity Book incorporates a variety of activities that help reinforce the concepts presented in the BIG BOOK. The last page of the Activity Book is a “Certificate of Safety” that declares the student has completed instruction in electrical safety and pledges to practice safe electrical behavior at all times! Your class may wish to conduct a special presentation ceremony for the occasion.

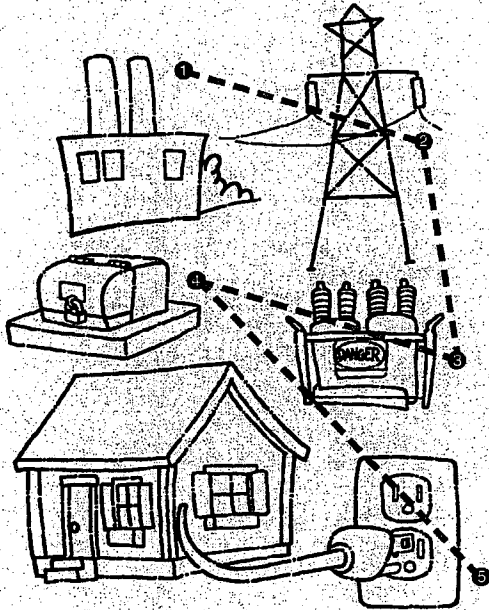
Pages of the Student Activity Book have been reproduced on the following pages with correct answers marked for your convenience in being able to assist them, should they require it.

Students
should be able
to use their
Activity Book
with little or no
instruction.

THE STUDENT ACTIVITY BOOK

Correct Answers

Connect the dots from plant to plug.

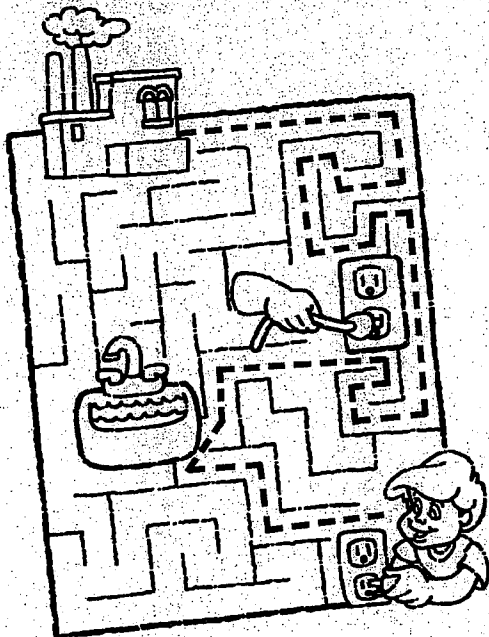


See how a power line delivers energy from the power plant to your electric outlets at home.

Find the hidden uses of energy.



Water & Electricity Don't Mix!
Find the safe path from the Power Plant to your outlet.



Circle the pictures showing good safety behavior.



OPTIONAL ENRICHMENT ACTIVITIES

Children learn best when they can participate in the learning process. By doing and discovering as they participate in an activity, they learn more. Enrichment activities give students an added opportunity to comprehend the lesson being presented.

Fossils — having children make their own "fossil" can be fun. There are several easy methods of making "fossils."

1. If you have access to a sand or rice box, simply smooth the surface, then ask the student to place their hand or another object in the box and gently press down. Remove the object. Explain that the image that remains can be thought of as a fossil. The real object that made the impression is gone. But the image is still there—much like what happens with real fossils.

2. Play-dough® or modeling clay may also be used in the same manner as sand to form impressions for "fossils."

Electricity Users — One way to assess students' knowledge of electricity is to ask them to identify items that use electricity.

1. The teacher asks several students to choose any item in the classroom and bring it to the center of the room. Collect about 12-15 objects. The teacher has already prepared two cards. One bears a large letter E, representing "uses electricity." The other card has the Ⓢ symbol, representing "does not use electricity." The teacher explains the significance of each card, then places one card on each side of the room, or study area. Ask different children to go to the collection pile and choose any item. Instruct the child to place the item with the appropriate symbol. Ask the child if he or she can explain what the item does with the electricity. (e.g., Tape player — electricity makes it play tapes, songs or stories). After all items have been deposited in the correct pile, discuss which pile has more items.

Children
learn best
when they
participate in
the learning
process.

OPTIONAL ENRICHMENT ACTIVITIES

Children can appreciate the importance of electricity by learning the many ways it affects our lives.

2. Children can work in small groups or individually for this project. Have the children cut out pictures of various appliances or other electrical devices from newspapers or magazines. With those pictures, they can create posters or collages. The posters should be categorized according to the general use of the items, e.g., items used for food storage or preparation, items used for entertainment, items used for cleaning the home, items used to build or construct, etc. The students can share their collages and posters with the class by explaining what pictures they chose.
3. Ask your class to name ways in which electricity is used in their homes. Write all of the answers on the board. Ask the children to discuss the items they would consider essential and which items they could live without if they had to. Since most of your students would say they consider their TV essential, while a refrigerator is not, ask them to consider the difficulty in keeping food edible without refrigeration.
4. Discuss how life was like when there was no electricity. Share pictures of cooking over a fire, washing clothes by hand, hauling water from a well, and using candles or coal oil lamps as the only source of light.
5. Adopt a "Pioneer" lifestyle in the class room for an hour (or if you're really brave, all day). Turn off all lights in the classroom. Keep a pitcher of water in the classroom for drinking. Do not use any of your electrically-powered appliances (VCR, record or tape player, overhead projector, etc.). In fact, discuss with your students alternative means of learning without using those pieces of equipment. If your students are at school for a lunch period, ask parents to send a sack lunch that doesn't require cooking or refrigeration.

ADMINISTER THE POST-TEST

Petitioner's Exhibit No. WSD-14
Vectren South-Electric
Page 11 of 45

The use of a post-lesson test allows you to gauge the effectiveness of the program with your students. Explain to your students that this is a work sheet and they are to choose the best answer.

As with the pre-test, twenty-five copies of the post-test have been provided in the instructional packet. Additional copies are available by calling (812) 491-4690, or you may duplicate the worksheet yourself – using the master on the following page.

Distribute the post-test "work sheet" to the students and instruct them to place a mark on the picture showing a **safe behavior**. The class should follow your instruction of working one group of pictures at a time and moving to the next group upon your instruction. Collect the work sheets and record the results on the Program Evaluation Form.

Self Evaluation

You may find it helpful to your students to return both the pre-test and the post-test to them. Engage in a brief discussion comparing their results. Ask students if they made better choices on the second worksheet. Ask the students what they learned through the lesson.

The Evaluation

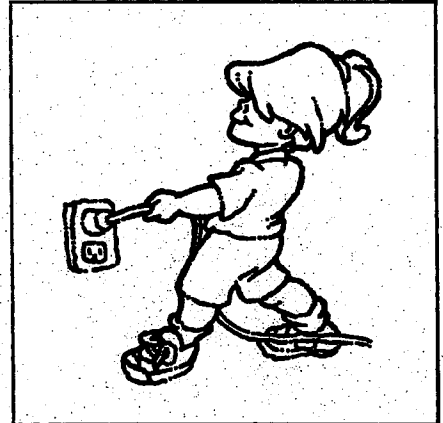
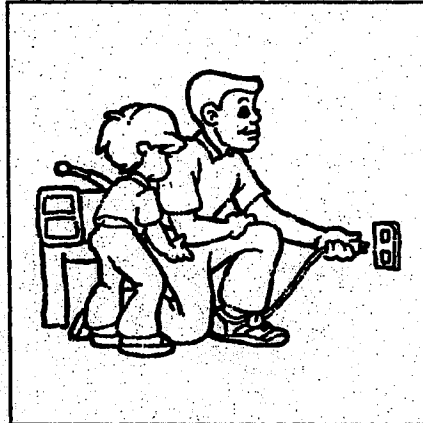
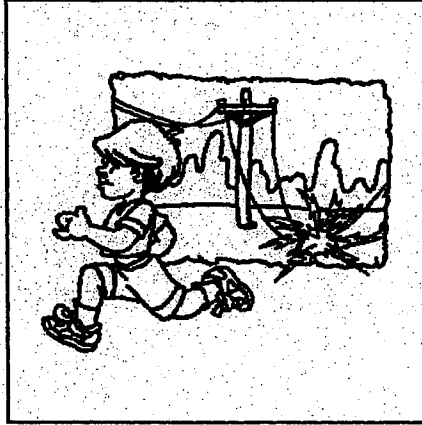
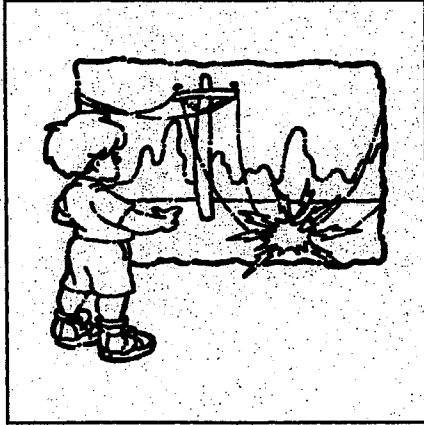
Just as the use of pre and post-tests allow you to evaluate the effectiveness of the program with your students, the Program Evaluation allows us to gauge the effectiveness of the program with you. We would sincerely appreciate your taking time to complete the questionnaire and filling out the pre & post-test scores on the Evaluation Form.

We are very
interested in
your opinion!
Should you
desire to make
additional
comments,
please feel free
to add as many
pages as
necessary.

Discover ELECTRICITY

Post-test

name: _____



The following vocabulary words are listed in the order in which they appear in the Big Book. The definitions are simplified and relate to the way the word is used in the context of the program.

Energy—the ability to do work. Energy can come from food. This helps our bodies do work. Energy can be made in a power plant by burning coal.

Electricity—is an energy that helps make things work.

Fossil—the imprint of something that lived long ago.

Fuel—something that is used to make energy. Fuel can be the food we eat, gasoline in our cars or coal that is burned to make electricity.

Coal—a kind of rock made by many layers of plant material that has been buried, compressed (squeezed) and changed over millions of years.

Rock—a hard piece of earth.

Power Lines—Strong cables made of many smaller wires. These lines carry electricity from the power plant where the electricity is made, to places like your school, where the electricity is used.

Danger—something that could hurt you.

Warning—a way of telling you that something could hurt you. Outside every substation there is a sign to tell you there are things inside that will hurt you. **DANGER KEEP OUT.**

Plug—the end of an electrical appliance cord that connects to the wall at an outlet. A plug may have 2 or 3 prongs.

Outlet—places along walls where electricity is available to use by plugging in an appliance.

Safety—free from danger, protected.

Rules—good habits to follow to stay safe.




Downed—power lines that have broken and are near or on the ground. They may still carry a lot of electricity. **DANGER KEEP AWAY.**

Substation—a fenced area that contains equipment that controls the power of electricity in the power lines. **DANGER KEEP OUT.**

Wasteful—using more than you need.

Save—use only what you need when you need it.

PROPERTIES OF ELECTRICITY

- 
1. Electricity is a traveler. It is always looking for a way to the ground.
 2. You and water are two of electricity's favorite things to travel through. DANGER.
 3. Things that help electricity travel from one place to another are called conductors. Your body, water and metals are good conductors.
 4. Things that stop electricity from traveling from one place to another are called insulators. Special rubber and glass are two insulators.
 5. In the blink of an eye, electricity can travel around the equator 7 1/2 times.
- 
- 

PLAY IT SAFE: INSIDE AND OUT

The safety rules discussed in this program are listed here for quick reference.

I n s i d e

1. Never put your finger or anything else that doesn't belong in an outlet.
2. Never pull the cord when you are unplugging something. Only pull the rubber plug.
3. Put only two plugs in one outlet.
4. Use hair dryers and other electrical appliances away from water.
5. Never put a knife, fork or spoon in a toaster.
6. Check for broken cords and plugs. If it's broken, don't use it!

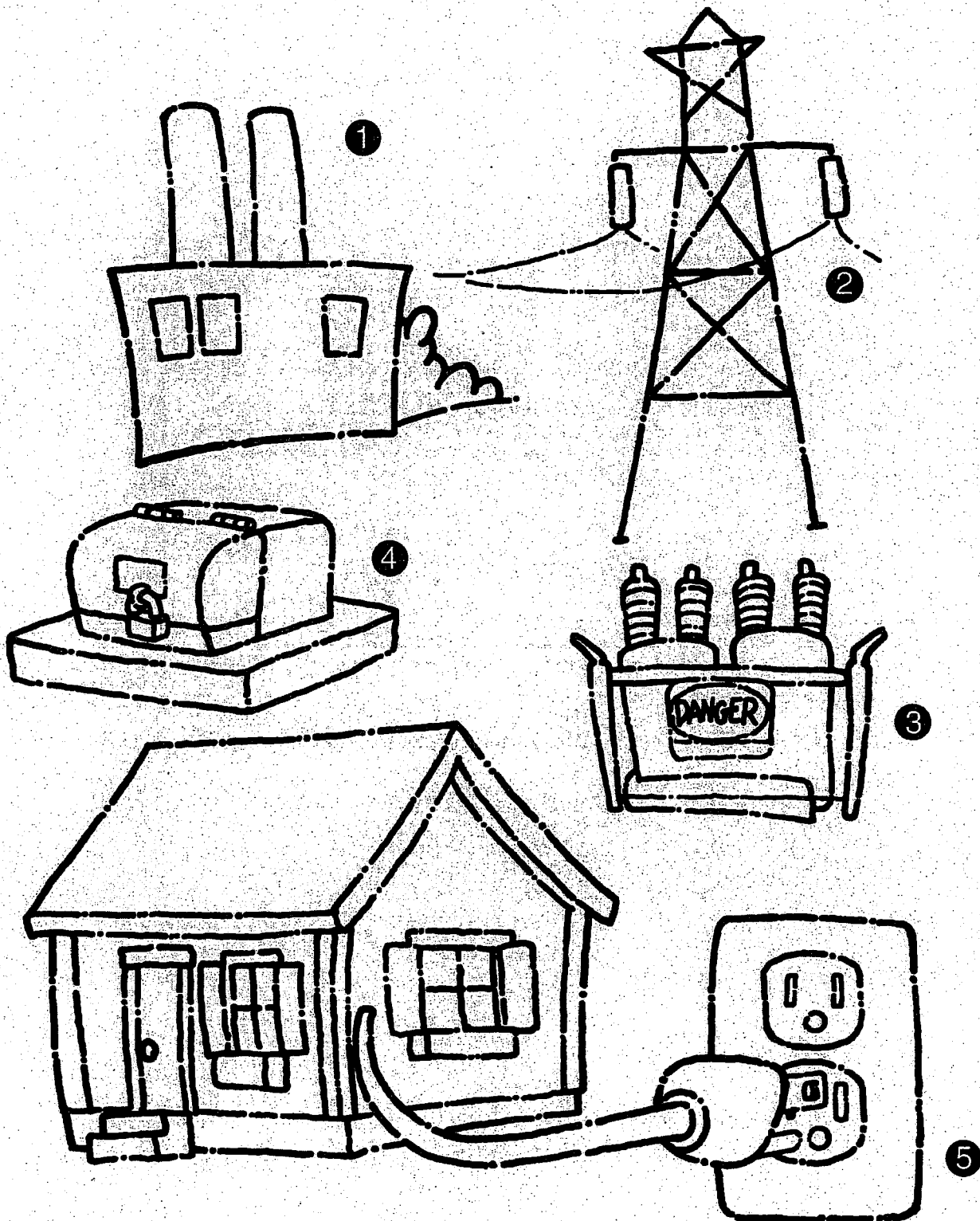
O u t s i d e

1. Stay away from all electrical equipment. That includes utility poles, power lines, substations, utility trucks and "green boxes" (pad mount transformers).
2. Pad mount transformers (green boxes) can be found near schools, small businesses and new residential areas. The green box houses the transformer and contains a lot of electrical energy. **DANGER STAY AWAY.**
3. Never go near power lines that may be lying on the ground.
4. Fly kites in open fields, away from electrical equipment.
5. Only climb trees that are far away from electrical equipment.
6. Play inside during a thunderstorm. Lightning is nature's electricity.

Discover **ELECTRICITY**

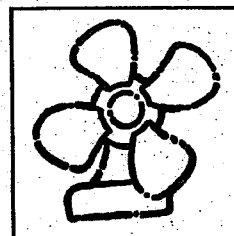
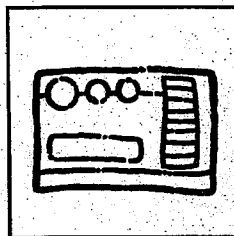
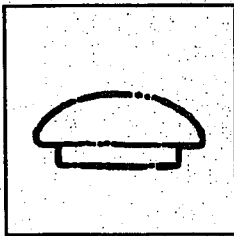
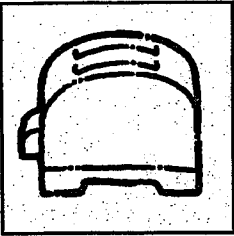


Connect the dots from plant to plug.



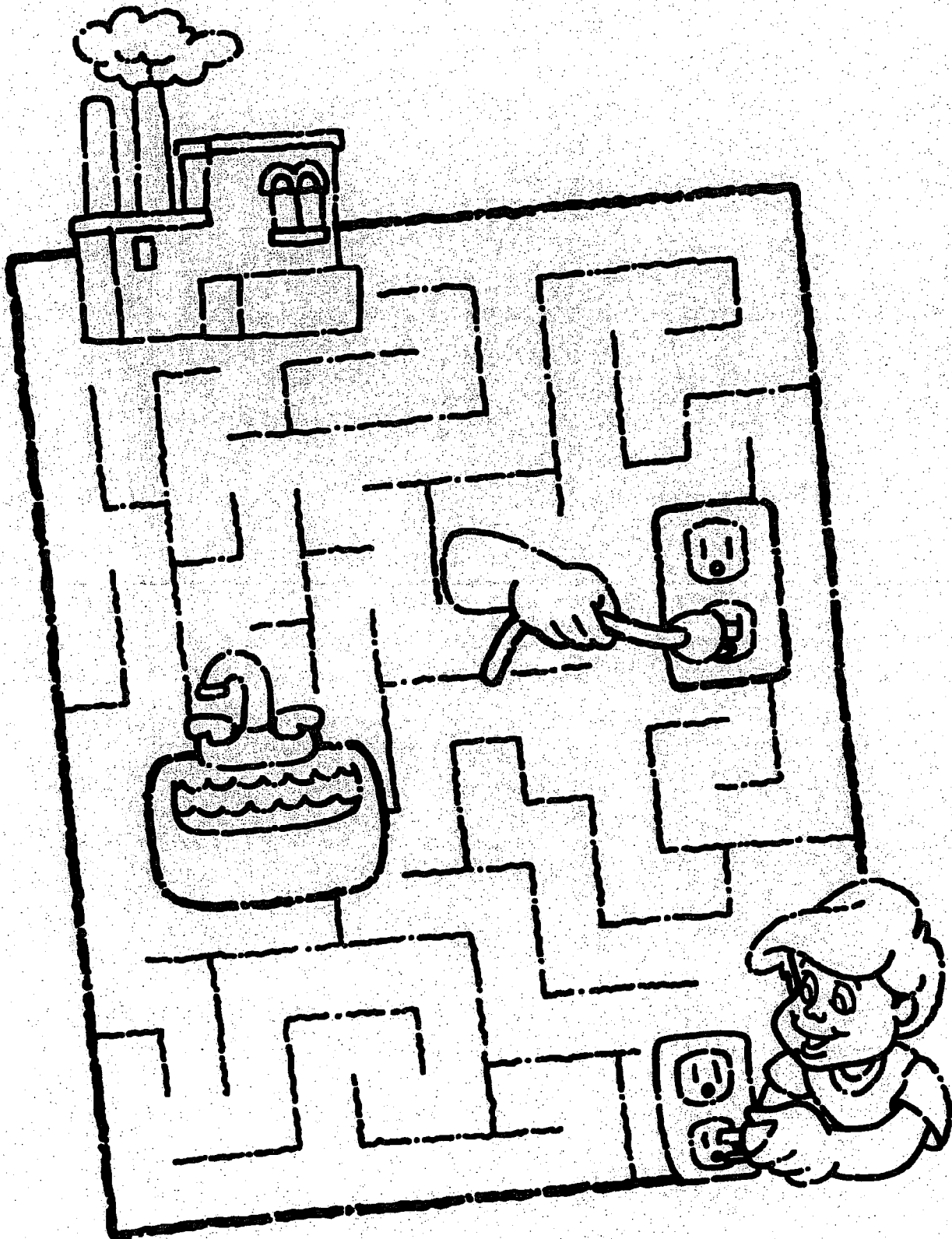
See how a power line delivers energy from the power plant
to your electric outlets at home.

Find the hidden uses of energy.

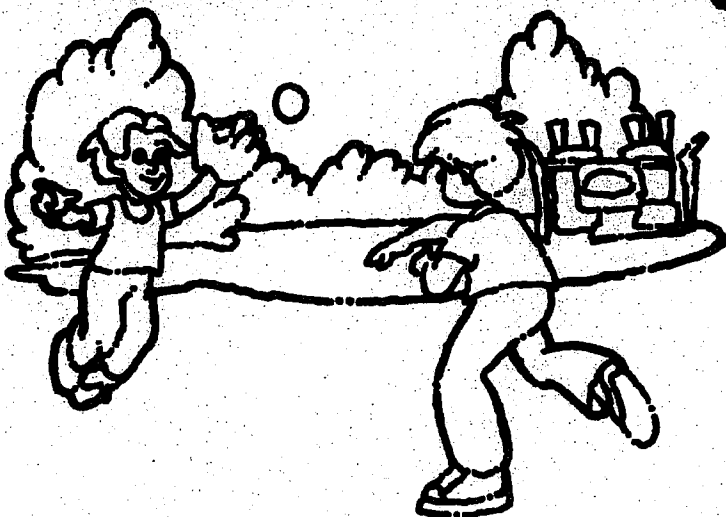
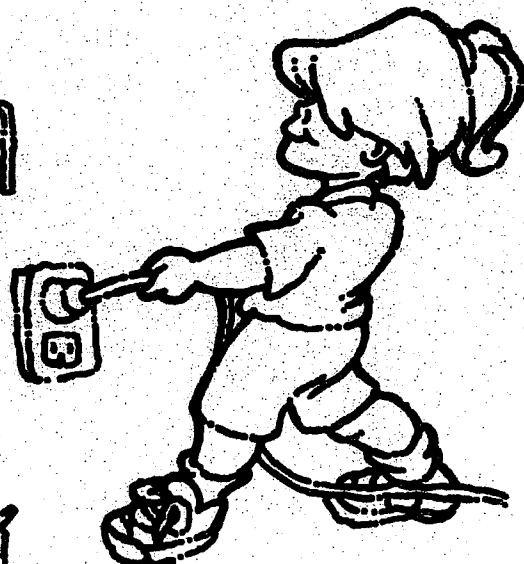
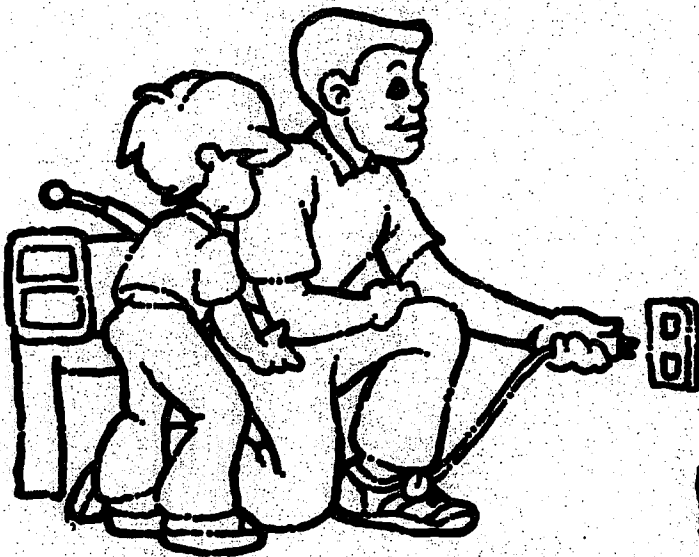


Water & Electricity Don't Mix!

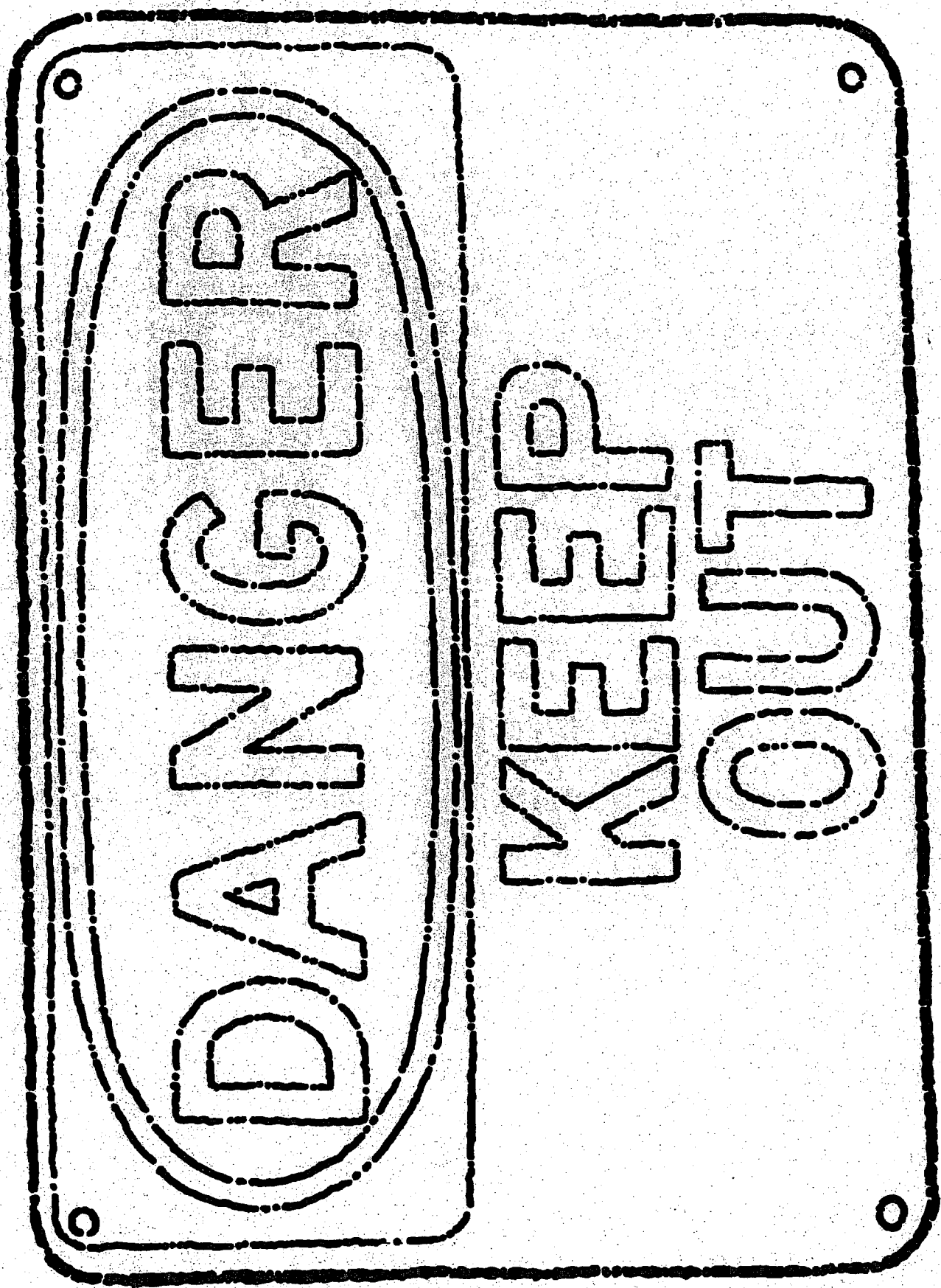
Find the safe path from the Power Plant to your outlet.



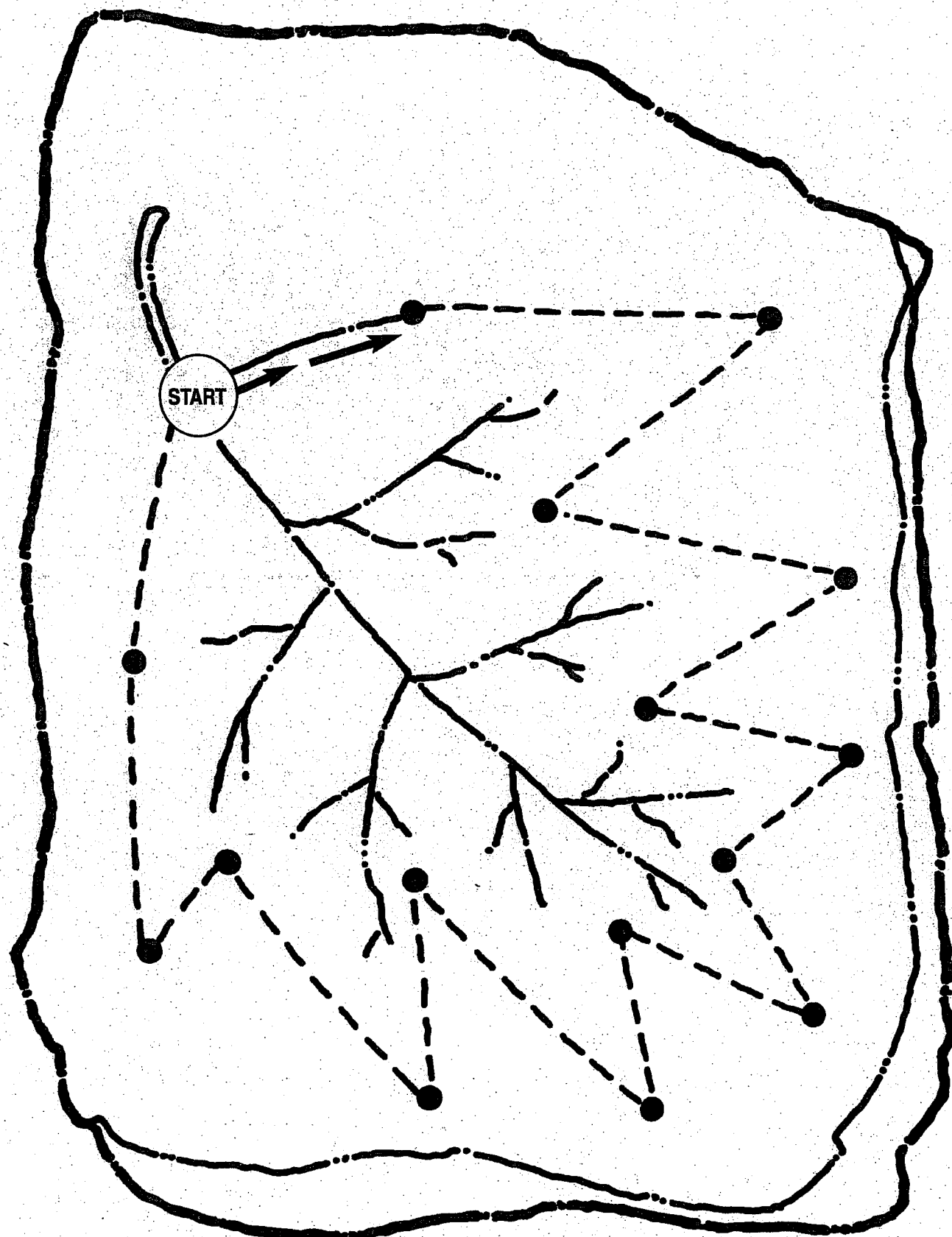
Circle the pictures showing good
safety behavior.



Color the "DANGER - KEEP OUT!" Sign.



Trace and color.



Fossilized Leaf

Certificate of Safety

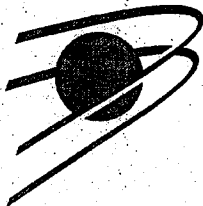
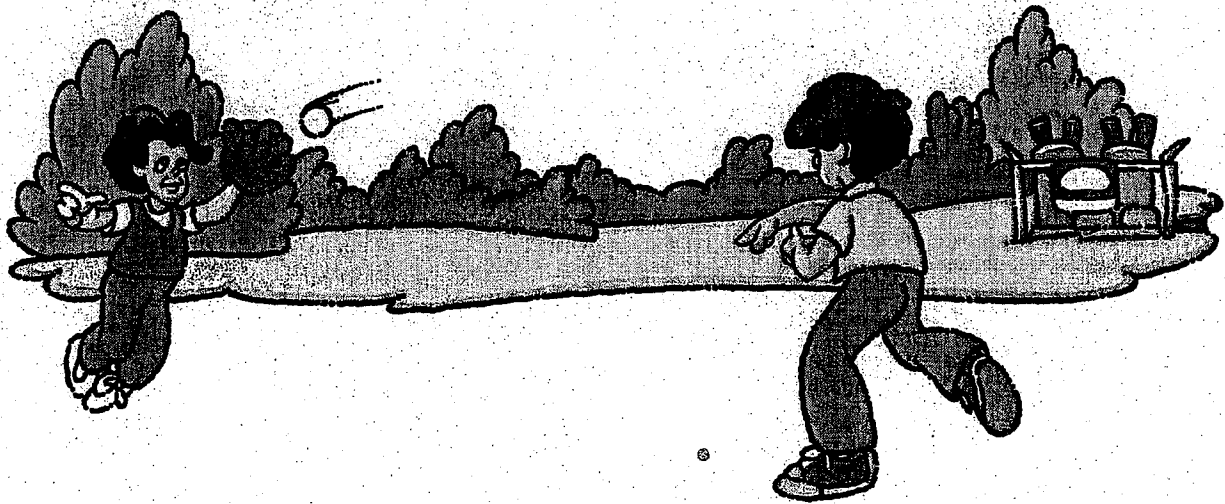
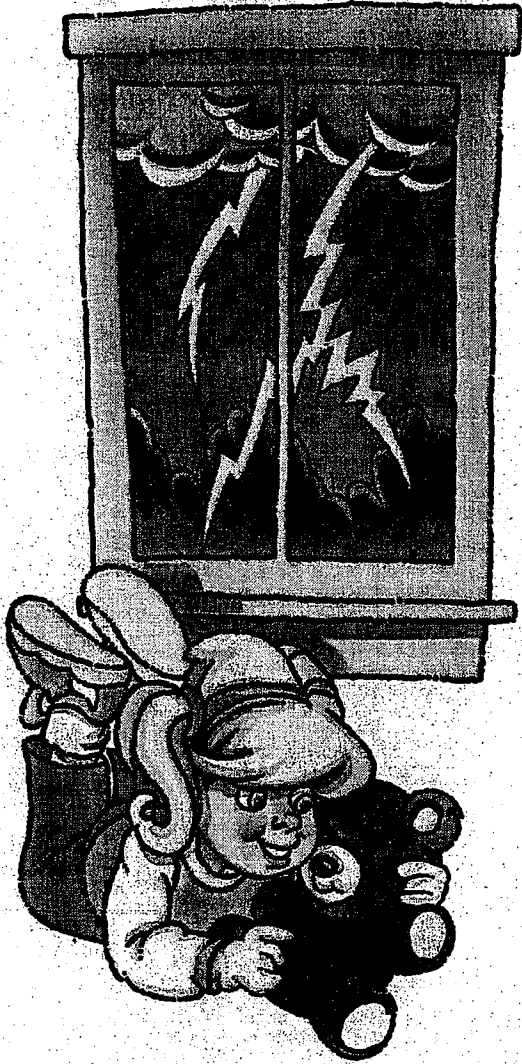
This certificate hereby declares that _____
has successfully completed the course in Electrical Safety and pledges to practice
safe behavior at all times!

Teacher's Signature

Date



Play It Safe!



VECTREN

Not just power. Possibility.

Michael Discovers **ELECTRICITY**

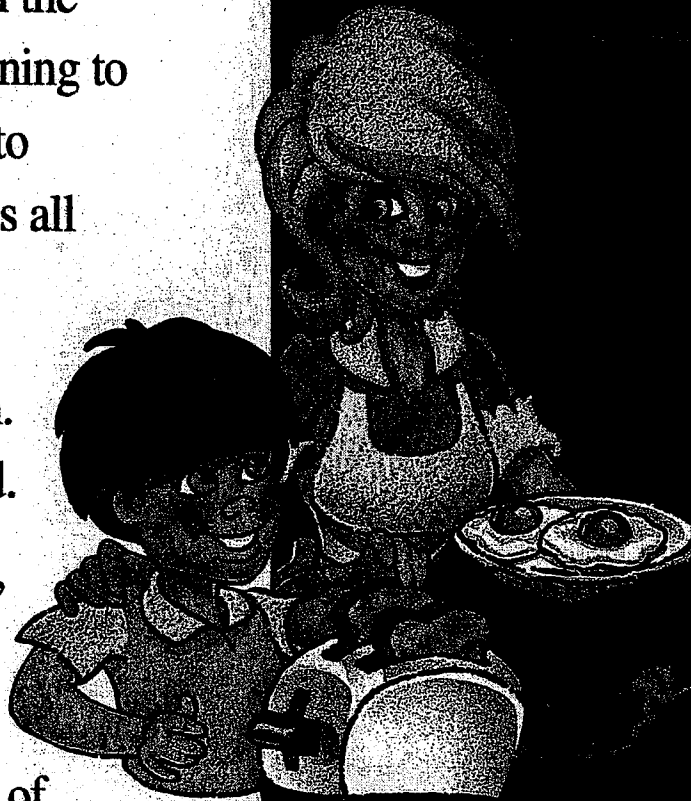


As Michael watched his mother make breakfast one morning, he noticed she cooked his eggs on the stove and prepared bread in the toaster, all while listening to the radio. He started to wonder, "What makes all these things work?"

So he asked his mom. "Electricity," she said.

"What is electricity?" asked Michael.

"Electricity is a form of energy," she replied. "Our bodies make energy from the food we eat so that we can work and play. Vectren provides the electricity to our homes so I can make **your** breakfast!"





energy electricity

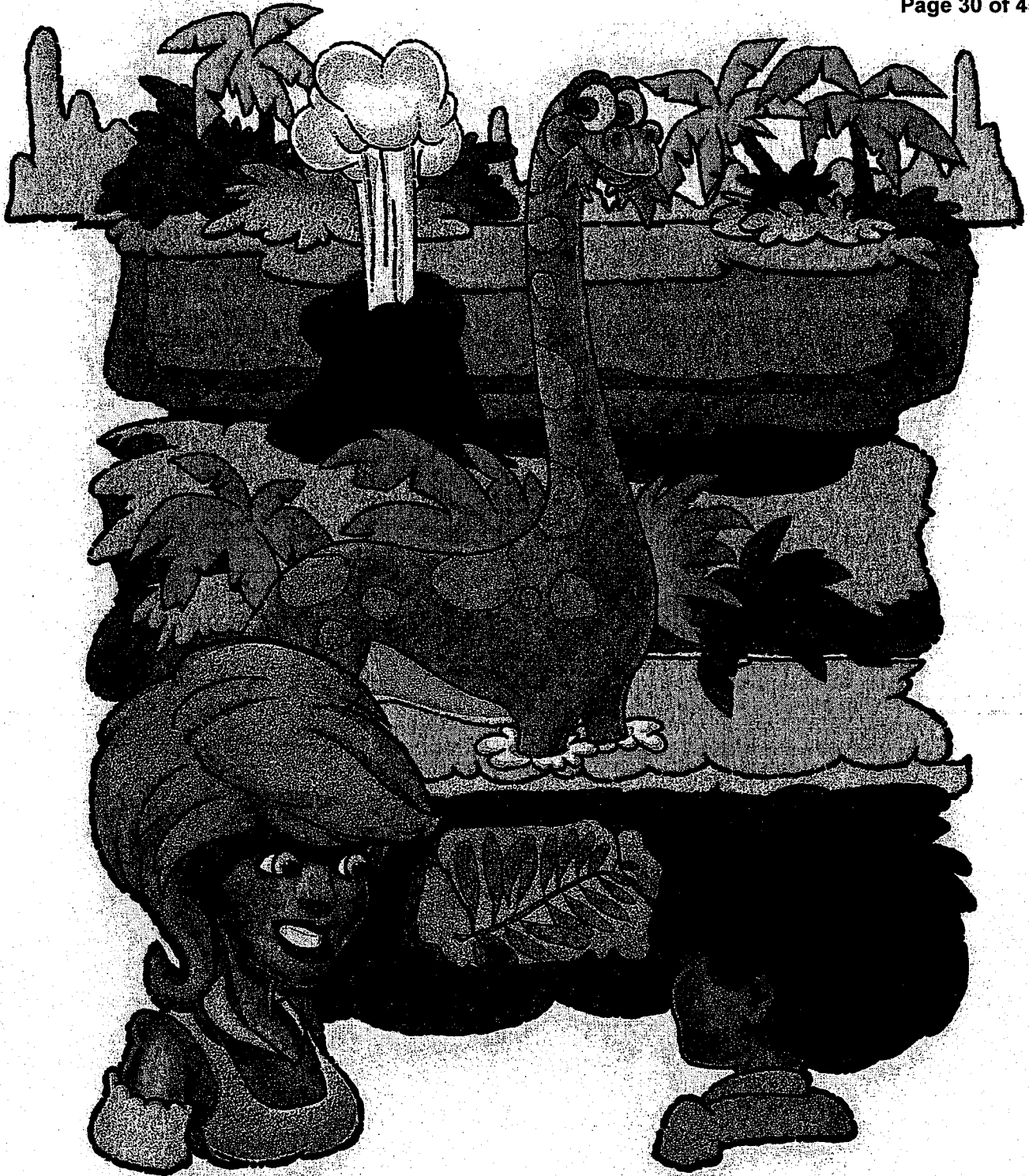
"Where does electricity come from?" he asked.

"That's a long story," said his mom. "Some people say it all starts with plants."

"Plants!" he said. "Electricity comes from plants?"

"Mostly," she said. "Plant material, like leaves and grass, that has been buried and squeezed for millions of years, slowly turn into coal. Because coal was once a living thing, it is called a fossil fuel. Have you ever seen a fossil?"





fossil fuel

"I have one in my rock collection," said Michael.

"Well, over time, the plant material left in the earth turns into fuels such as coal, oil, and natural gas," explained his mom.

"I have a lump of coal in my rock collection, too!" he happily replied.

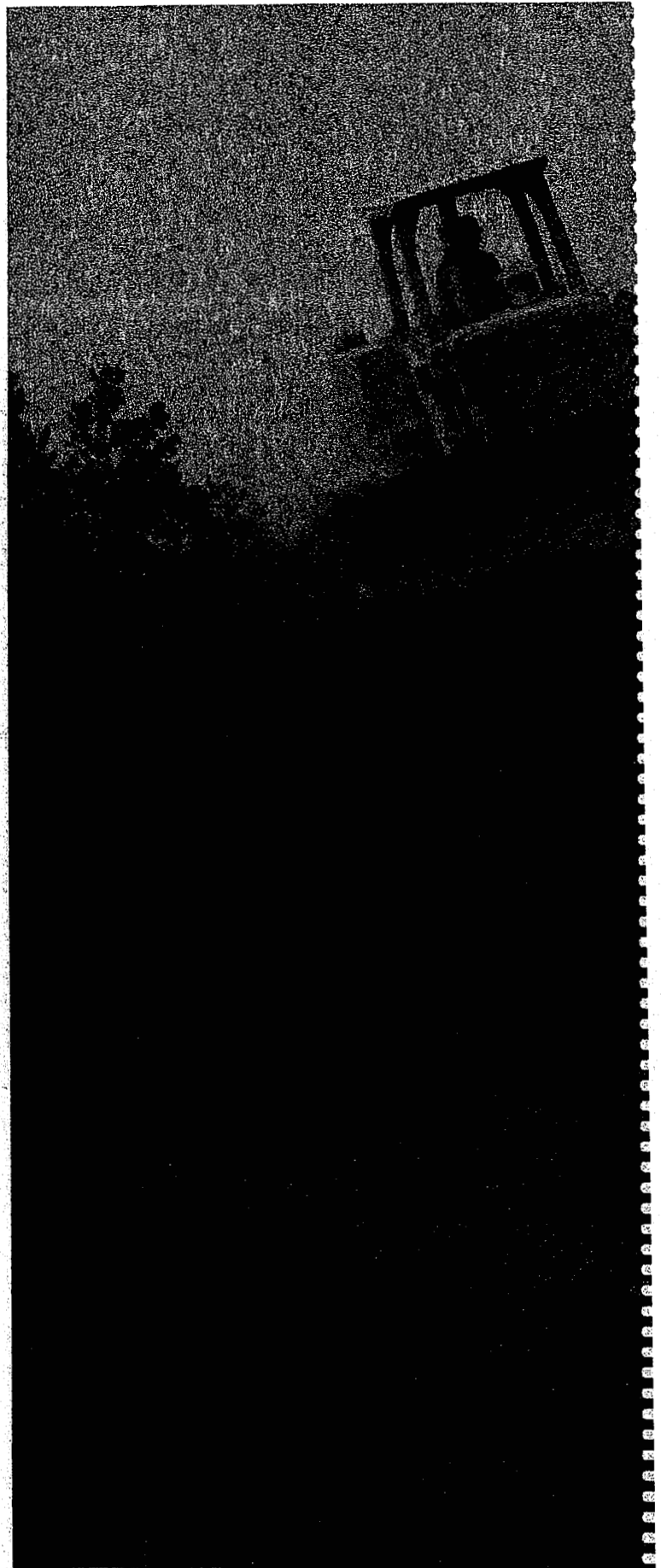
"Coal is used by a lot of energy companies," his mom said.

"That's how Vectren makes **our** electricity."



"You mean coal helps make my breakfast?" asked Michael.

"Yes," his mom replied with a chuckle, "I suppose it does."



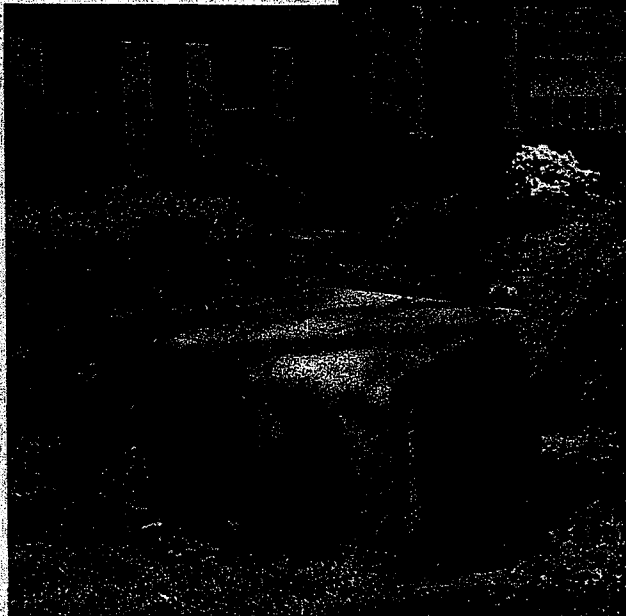


rock coal

"But it's not that simple," said his mom. "Vectren uses coal to make electricity at the power plant, then the electricity is sent over power lines."

"You mean like the power lines over our yard and along the street poles?" asked Michael.

"Sometimes even underground," commented Mom. "The green boxes you see in some yards are connected to power lines buried underground."





power lines

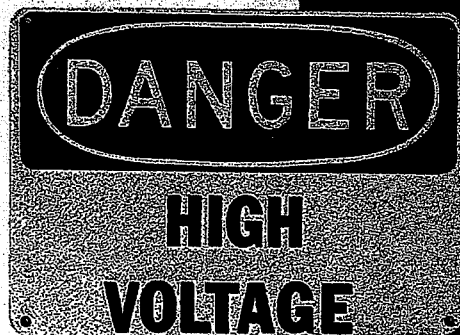
"Yes," said his mom, "but first the electricity is sent over special power lines to an energy substation like the one down the street."

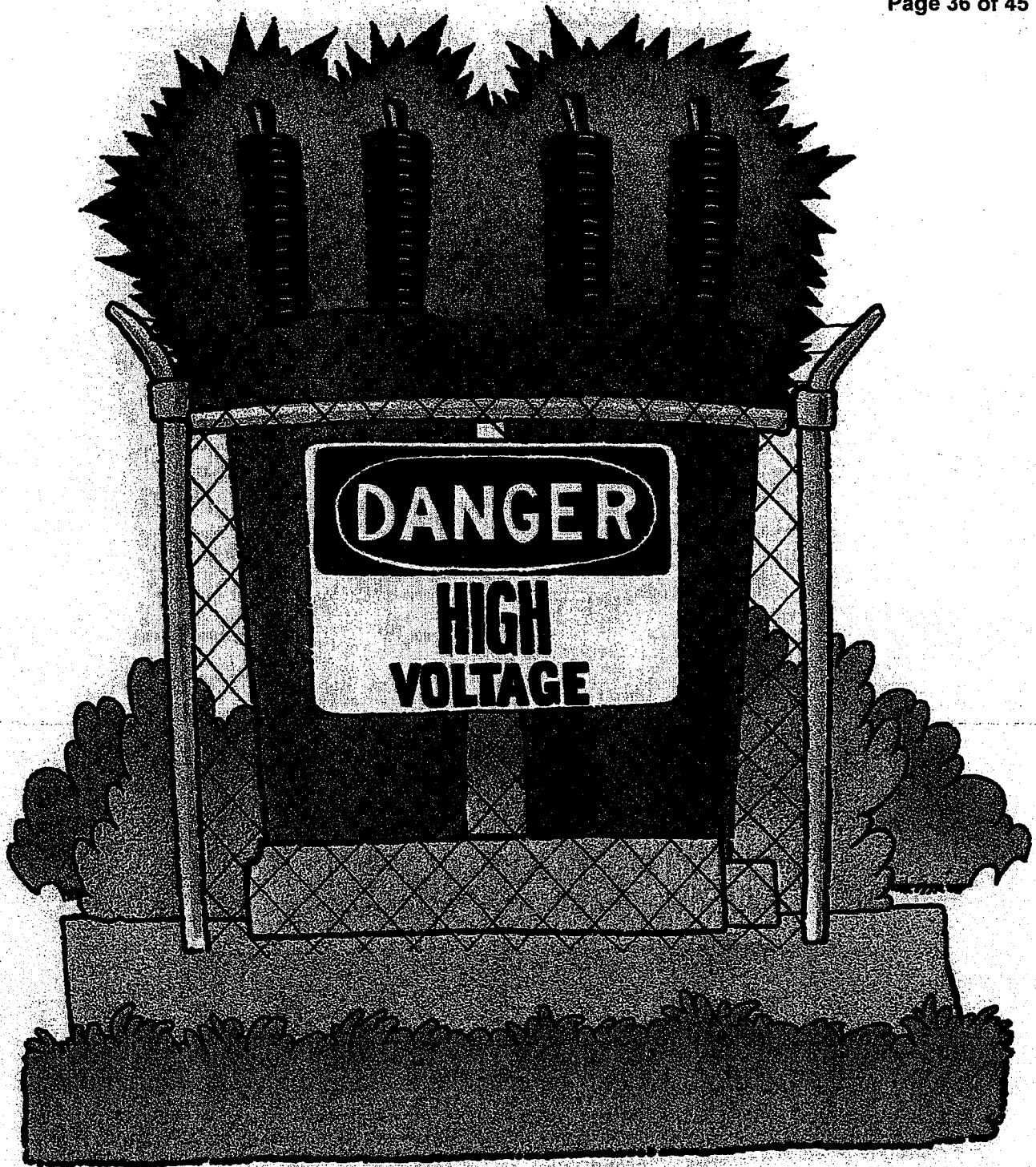
"The one with the warning signs that say 'DANGER - Keep Out'?" asked Michael.

"That's right, she said. "You should never go near a substation. There is a lot of electricity there, which is dangerous."

"But how does it get from the substation to our house?" he asked.

"More power lines," answered his mom.





danger substation

"Then what?" asked Michael.

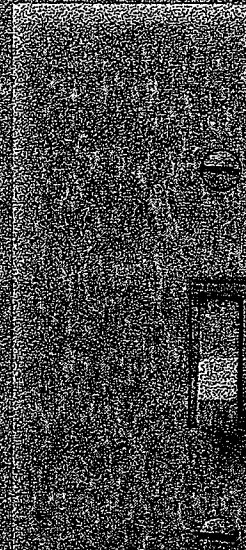
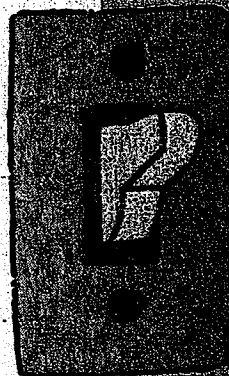
"Then it is sent through our house by wires that connect to the light switches and outlets you see all over the house," said his mom.

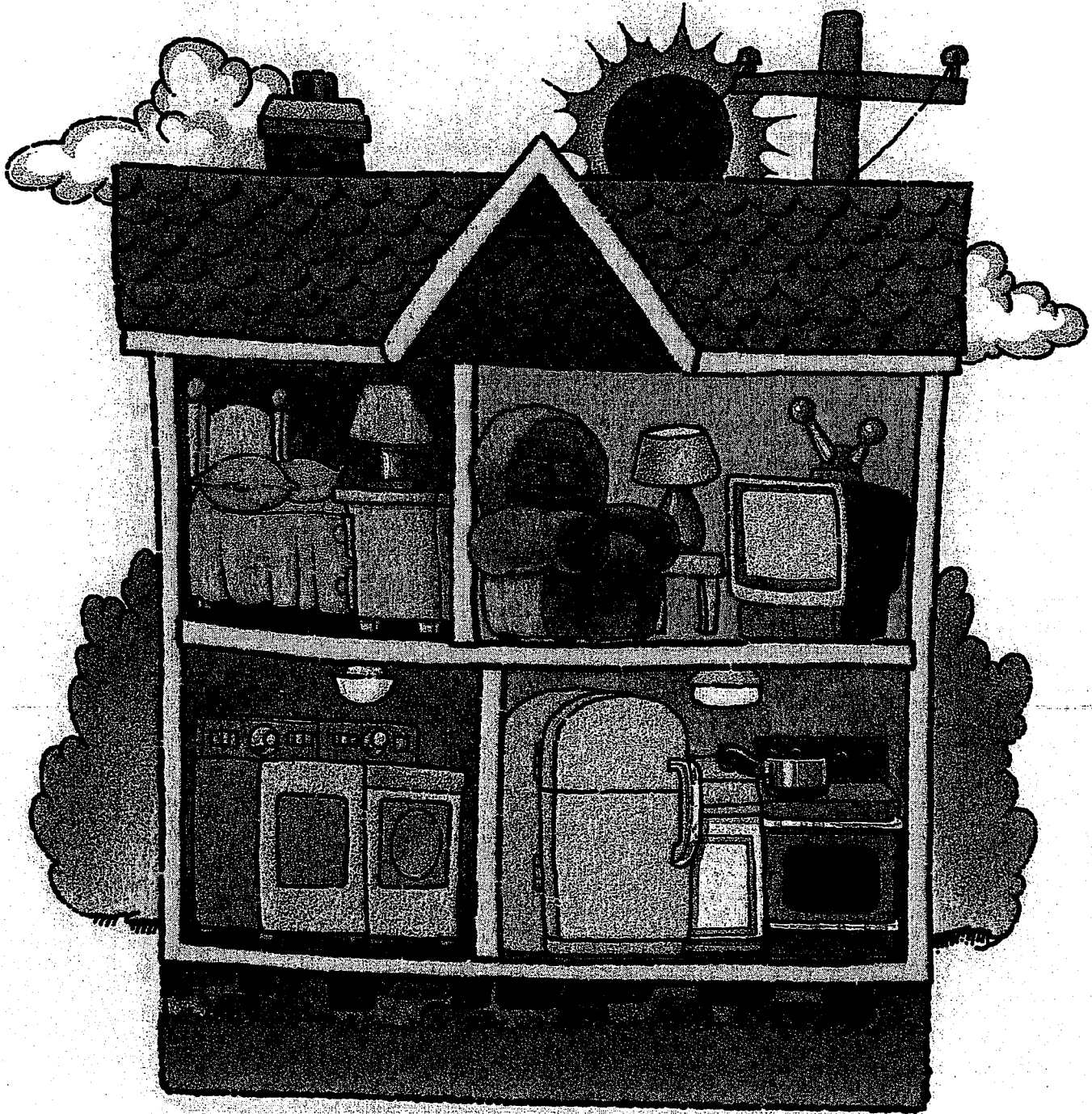
Michael thought about this for a moment. "So all we have to do is turn on a switch?"

"Or plug something in," answered his mom.

"Electricity runs our washer and dryer, our refrigerator, our microwave, dishwasher, toaster, TV, VCR, stereo, and even our hair dryer."

"Plus every light in the house!" added Michael.





plug outlet

"Right!" said his mom. "So now you know where it comes from, and how we use it, but do you know the **safety** rules of electricity?"

"You mean like, 'Never put your finger or anything in an outlet'?" asked Michael.

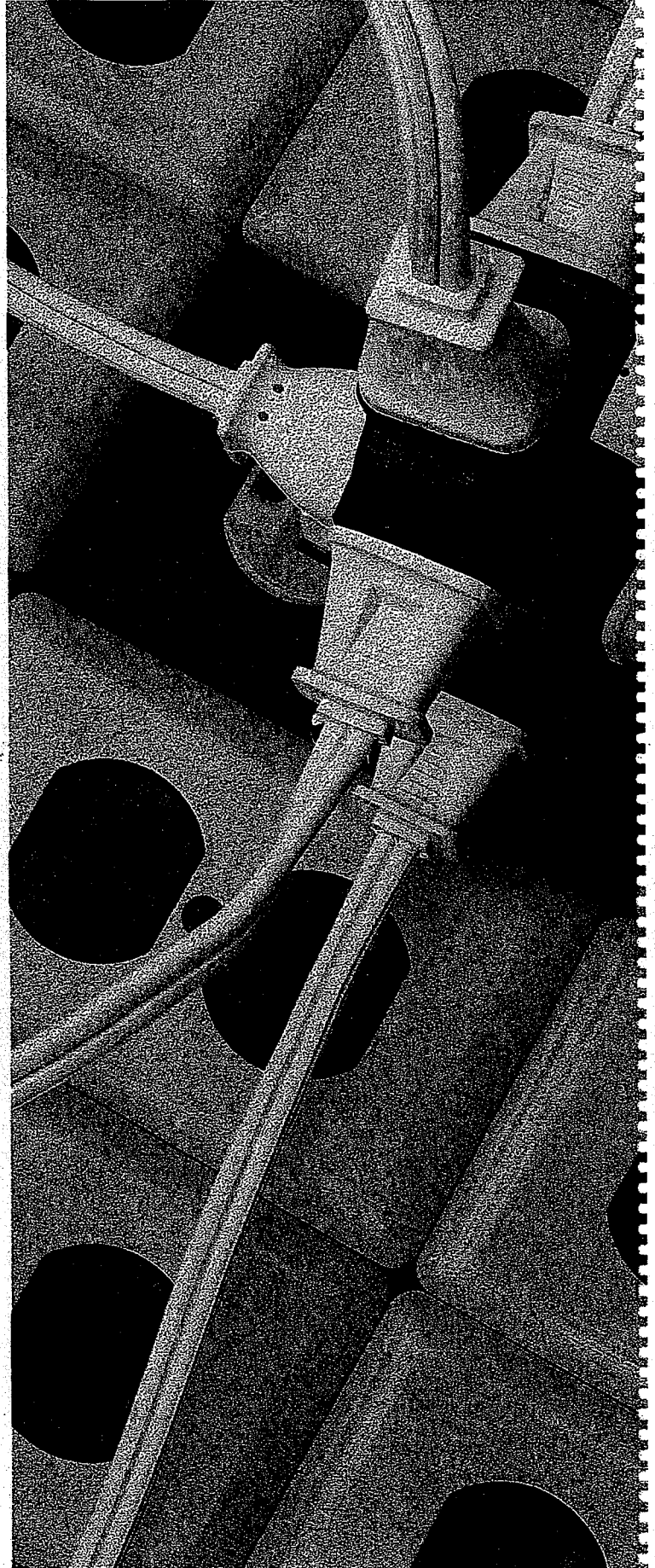
"That's one of the safety rules!" said his mom. "Here are some more:

Never pull the cord when you are unplugging something. Only pull the rubber plug.

Never use a hair dryer around a sink or bathtub. If it gets wet while it is plugged in, it could hurt someone.

Never put a knife or anything that doesn't belong in a toaster. It is dangerous!

Always ask a grown up to help you use **any** electrical appliance."





safety

rules

"Those are good rules for **inside** the house," mom continued, "but there are also safety rules for outside as well:

Never play in or near substations or power lines.

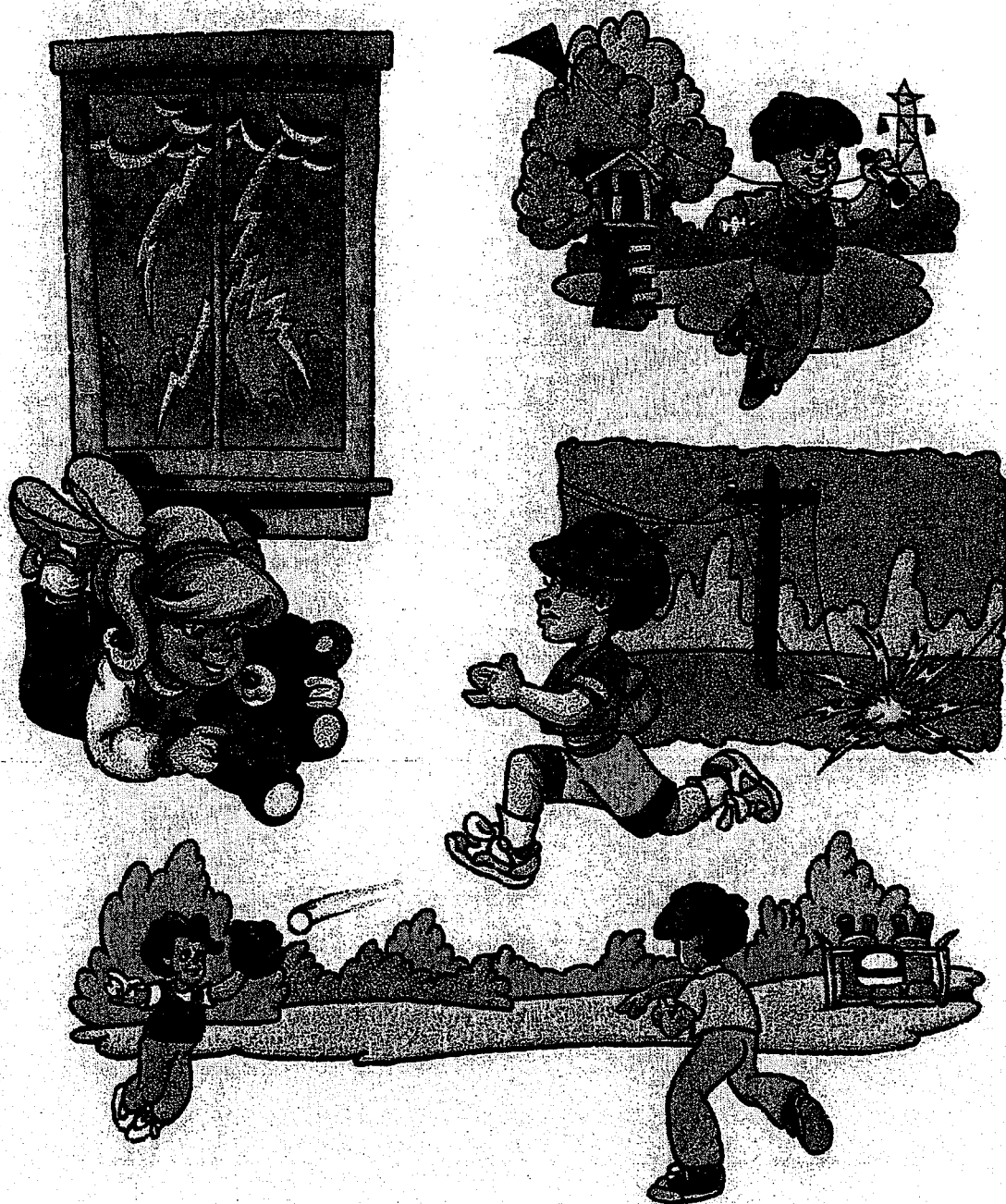
Never fly kites near power lines.

Never go near downed power lines.

Don't play outside during a thunderstorm.

Lightning is Nature's electricity! And it is even more powerful than the electricity in power lines."





lightning warning

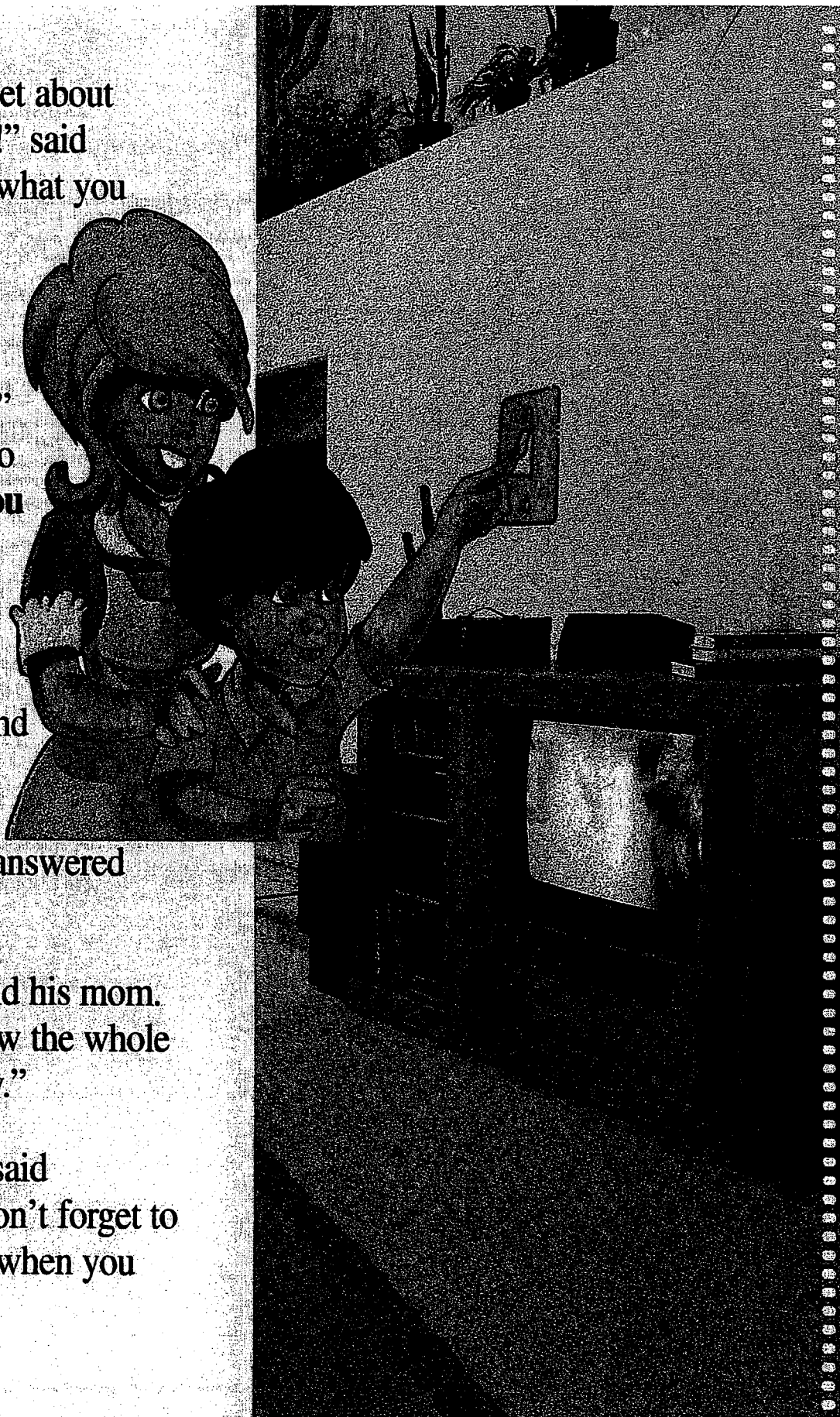
"Mom, don't forget about **saving** electricity!" said Michael. "That's what you always tell me."

"You're right! Saving electricity is everyone's job," said his mom. "Do you know how **you** can help?"

"Always turn off the TV when I'm not watching it, and always turn out lights when I leave the room," answered Michael.

"Right again!" said his mom. "So now you know the whole story of electricity."

"Thanks, mom," said Michael. "Now don't forget to turn off the radio when you leave the room."





wasteful save



VECTREN

Not just power. Possibility.

**VECTREN SOUTH
ELECTRIC TARIFF**
Statement of Electric Property
Original Cost Rate Base at March 31, 2006

Line No.	Activity (FERC) No.	Description	Electric Plant Per Books at March 31, 2006	Adjustments and Eliminations	As Adjusted Pro Forma Rate Base at March 31, 2006
<u>Utility Plant</u>					
1	101	In Service - Unitized	\$ 1,287,918,382	\$ -	\$ 1,287,918,382
2	105	Property Held for Future Use	3,163,409	(3,163,409)	-
3	106	Completed Const. Not Classified	380,787,447	-	380,787,447
4	106	Addition of Fabric Filter at Culley Unit 3 (Estimate)		49,000,000	49,000,000
5	106	Addition of Transmission Plant (Estimate)		16,977,000	16,977,000
6	107	Const. Work in Progress	47,761,550	(47,761,550)	-
7		Gross Utility Plant	\$ 1,719,630,788	\$ 15,052,041	\$ 1,734,682,829
<u>Accumulated Depreciation</u>					
8	108	Utility Plant	\$ (784,045,954)	\$ -	\$ (784,045,954)
9		Net Utility Plant (Line 7 + Line 8)	\$ 935,584,834	\$ 15,052,041	\$ 950,636,875
<u>Material & Supplies (13 Month Average)</u>					
10	154	Utility Material & Supplies	\$ 20,594,770	\$ -	\$ 20,594,770
11	163	Stores Expense	3,623,633	-	3,623,633
12	151	Fuel Stock	13,495,550	-	13,495,550
13	158	Allowance Inventory	183,973	-	183,973
14		Total Material & Supplies	\$ 37,897,926	\$ -	\$ 37,897,926
15	182	DSM - Post 1994 Regulatory Asset	\$ 26,777,987	\$ -	\$ 26,777,987
16	182	DSM - Pre 1994 Regulatory Asset	1,791,376	-	1,791,376
17	182	MISO Day 2 Startup Costs	655,724	-	655,724
18		Total Regulatory Assets	\$ 29,225,087	\$ -	\$ 29,225,087
19		Total Rate Base (Line 9 + Line 14 + Line 18)	\$ 1,002,707,846	\$ 15,052,041	\$ 1,017,759,887

**VECTREN SOUTH
ELECTRIC TARIFF
RATE BASE CHANGE - 12/31/93 TO 3/31/06**

Line No.	Utility Plant	December 31, 1993	March 31, 2006	Increase/(Decrease)
1	Intangible Plant	\$ 12,151	\$ 440,555	\$ 428,404
2	Steam Production Plant	523,092,355	1,072,981,043	549,888,688
3	Other Production Plant	43,870,297	83,736,233	39,865,936
4	Transmission Plant	95,687,046	174,641,009	78,953,963
5	Distribution Plant	174,123,790	341,418,139	167,294,349
6	General Plant	9,451,555	21,123,121	11,671,566
7	General Plant - Common	30,466,944	40,342,729	9,875,785
8	Gross Utility Plant	\$ 876,704,138	\$ 1,734,682,829	\$ 857,978,691
9	Total Electric Depreciation Reserve	\$ 375,385,221	\$ 766,771,725	\$ 391,386,504
10	Total Common Depreciation Reserve	6,019,455	17,274,229	11,254,774
11	Total Depreciation Reserve	\$ 381,404,676	\$ 784,045,954	\$ 402,641,278
12	Net Utility Plant (Line 8 - Line 11)	\$ 495,299,462	\$ 950,636,875	\$ 455,337,412
<u>Other Rate Base Components</u>				
13	Material and Supplies	\$ 12,750,951	\$ 20,594,770	\$ 7,843,819
14	Fuel Stock	14,434,746	13,495,550	(939,196)
15	Stores Expense		3,623,633	3,623,633
16	Allowance Inventory		183,973	183,973
17	MISO		655,724	655,724
18	Culley Clean Air Compliance Project	101,383,553		(101,383,553)
19	Ancillary Culley Project	9,811,899		(9,811,899)
20	DSM Expenditures	6,395,053		(6,395,053)
21	DSM - Post 94 Regulatory Asset		26,777,987	26,777,987
22	DSM - Pre 94 Regulatory Asset		1,791,376	1,791,376
23	Less: Non-Jurisdictional Rate Base	(65,560,183)		65,560,183
24	Total Other Rate Base Components	\$ 79,216,019	\$ 67,123,012	\$ (12,093,007)
25	Total Rate Base (Line 12 + Line 24)	\$ 574,515,481	\$ 1,017,759,887	\$ 443,244,406

**SOUTHERN INDIANA GAS AND ELECTRIC COMPANY
d/b/a VECTREN ENERGY DELIVERY OF INDIANA, INC.
(VECTREN SOUTH – ELECTRIC)**

43111
IURC CAUSE NO. _____

DIRECT TESTIMONY

OF

**ERIC J. SCHACH
VICE PRESIDENT, ENERGY DELIVERY**

ON

**ELECTRIC SERVICE RELIABILITY
ENHANCEMENT INITIATIVES AND SUPPORT FOR
PRO FORMA RELATED ADJUSTMENTS**

Direct Testimony of Eric J. Schach

Q. Please state your name, business address, and occupation.

A. My name is Eric J. Schach. My business address is One Vectren Square, Evansville, Indiana 47708. I am the Vice President of Energy Delivery for Vectren Energy Delivery of Indiana, Inc. (Vectren South) which includes the gas and electric operations for the Vectren South service territory.

Q. What are your duties in your present position?

A. As Vice President of Vectren South, I have overall responsibility for the operation and maintenance of Vectren South electric and gas transmission and distribution systems.

Q. How long have you been employed by Vectren South?

A. I have been employed by Vectren South since the March 31, 2000 merger of Indiana Energy, Inc. and SIGCORP, Inc. My career in the utility industry began in 1993 with Indiana Energy, Inc. I joined Indiana Energy as Director of Application Development and in 1995 became the Vice President of Information Technology. Prior to joining Indiana Energy, I was employed by IBM for 10 years.

In 2000, during the merger of Indiana Energy, Inc. and SIGCORP, Inc., I became Vectren's Chief Information Officer. In 2003, I became Vice President of Energy Delivery which is my current role.

Q. What is your educational background?

A. I received a Bachelor of Science degree in Quantitative Business Analysis from Indiana University in 1983.

Q. Have you previously testified before this Commission?

A. No.

1
2 **Q. What is the purpose of your testimony in this proceeding?**

3 A. My testimony will describe Vectren South's commitment to electric service
4 reliability and the many initiatives presently underway and planned to sustain and
5 improve upon our ability to deliver power to our customers. Following is a
6 summary of the background and direction we are taking at Vectren South
7 regarding our electric maintenance programs. I will discuss the factors driving
8 our need to enhance operations and maintenance programs and will then outline
9 specifically how these enhancements impact existing maintenance programs at
10 Vectren South, and how new programs will be implemented to achieve certain
11 improvements. These enhancements, based on careful planning and review of
12 the current condition of our system, will result in improved operations and greater
13 reliability and service quality.
14

15 **INTRODUCTION**
16

17 **Q. Please provide background on what Vectren South has been doing to**
18 **improve, maintain and enhance operations and maintenance activities.**

19 A. Vectren South has undertaken a multifaceted approach toward maintaining and
20 improving the operations and maintenance of our electric system. There have
21 been organizational enhancements focused on bringing specific skill-sets into
22 key processes and positions in electric engineering, electric operations, as well
23 as electric dispatching. Technology enhancements have been implemented in
24 Outage Management as well as new SCADA systems for transmission and
25 distribution operations. There have been key capital investments in both
26 distribution and transmission infrastructure and a revised storm management
27 plan to support outage restoration. Lastly, there has been a move toward greater
28 emphasis on preventative maintenance programs.
29

30 Our efforts in electric operations and maintenance have been focused and
31 diligent, and we have endeavored to perform cost effective maintenance using
32 technology to optimize employee time. After engaging in a self critical process to

1 find any gaps in our processes and determine how we can provide better service,
2 we have determined that we can improve certain operational practices. This will
3 require creation of new programs and expansion of others as well as the addition
4 of field resources.

5
6 **Q. Why does Vectren South believe it is important to enhance its current**
7 **maintenance program and practices?**

8 A. There are a number of factors causing us to review and modify our maintenance
9 practices. Like many utilities within Indiana and around the country, Vectren
10 South is increasingly sensitive to the age of its facilities. Operating philosophies
11 and practices for our aging equipment and infrastructure need to be more
12 structured, proactive and prevention focused. In addition, the complexity of our
13 system – line miles, number of substations and number of circuits – has also
14 increased causing additional modification of our maintenance policies to support
15 these changes. Ultimately, we have high expectations for system performance.
16 While still adequate, we have begun to see some decline in metrics we track and
17 we want to make sure we devote sufficient resources, with proper direction, so
18 we can achieve high quality service to customers.

19
20 Vectren South Witness William S. Doty speaks to the increased national
21 emphasis on system reliability. Vectren South, like the rest of the utility industry,
22 anticipates increased customer expectations for higher reliability.

23
24 **Q. How can Vectren South further its efforts to improve operations and**
25 **maintenance activities and processes?**

26 A. Vectren South has maximized the benefit of existing maintenance programs. In
27 order to manage operations, we have carefully balanced the frequency and
28 prioritization of maintenance activities with the existing level of field resources.
29 To improve our performance, additional system equipment information,
30 enhanced maintenance programs that are preventative and proactive in nature
31 and additional staffing will need to be developed. Based on our current direction
32 as well as our utility industry review of reliability "best practices", our continued

1 movement towards a preventative, proactive strategy for operations and
2 maintenance is warranted.
3

4 **Q. Please describe how Vectren South assessed current utility industry**
5 **practices related to maintenance and reliability improvement programs.**

6 A. In addition to staying abreast of industry strategies via utility "best practice"
7 conferences and industry group committee networking, Vectren South hosted a
8 series of industry consultants and solution providers to provide presentations and
9 discussion on "best practice" engagements underway across the industry. This
10 six month process was then followed by a number of utility site visits where our
11 key electric operations management team visited their peers at utilities that
12 appeared to be further along on preventative maintenance strategies.
13

14 Vectren South also requested and received an evaluation of our inspection and
15 maintenance practices from an unbiased source familiar with the inspection and
16 maintenance practices of many electric utilities.
17

18 At Vectren South's request, the Associated Electric and Gas Insurance Services
19 Limited (AEGIS) reviewed Vectren South's electric operations and evaluated its
20 performance. AEGIS is an industry mutual insurance company that provides
21 insurance coverage to electric and gas utilities. AEGIS is not paid for these
22 evaluation services. Rather, these types of evaluations are in the mutual interest
23 of the Company and AEGIS given the business relationship. AEGIS concluded
24 that Vectren South was satisfactory in many programs. AEGIS recommended
25 improvements in certain areas to be consistent with other utilities they audit.
26 AEGIS recommendations, together with our own analysis, have led to
27 recommended programs in the areas of Substation Design, Substation
28 Inspection, Distribution Inspection, Vegetation Management, and Public Safety
29 and Awareness.
30

31 The combined results of these efforts solidified and corroborated our transition
32 towards an increased preventative and proactive operations and maintenance
33 approach.

1
2 **Q. How will Vectren South implement a more preventative and proactive**
3 **maintenance strategy?**

4 A. The first step is to embark on a number of inspection initiatives to gather specific
5 equipment and performance data regarding the system. We must capture
6 additional information beyond our currently documented information on our
7 assets to support thorough analysis and to support new engineering tools. The
8 information sought will relate to such things as current operating condition,
9 records of last known work performed on the equipment, load and condition
10 changes, etc. When this information is gathered, accessible, and managed, we
11 will be better able to put in place a comprehensive preventative and proactive set
12 of maintenance work practices. The activities I describe are designed to obtain
13 this type of information and/or to commence improvements in areas where we
14 already know we can achieve benefits in terms of reliability of service and/or
15 operations management.
16

17 **Q. Can you provide an example that describes your recommended approach**
18 **to preventative and proactive maintenance?**

19 A. Yes. An excellent example is pole inspections. Vectren South has conducted a
20 survey to determine the physical condition of Vectren South's wooden poles.
21 The process of moving to a proactive maintenance program follows a number of
22 steps:
23

- 24 ▪ **We must gather physical data** – in this case Vectren South used a
25 contracting firm to do core borings and physical inspections of the poles. The
26 data was captured and used extensively for analysis now and retained for
27 future analysis.
- 28 ▪ **Analyze data** – the results were analyzed to determine the expected
29 remaining life of the pole and prioritize appropriate action plans.
- 30 ▪ **Develop predictive model** – based on several criteria such as condition,
31 exposure, type of pole and other factors, models are being developed to
32 predict the expected useful life of Vectren South's wooden poles – these

1 predictive models will enable Vectren South to develop a comprehensive and
2 cost effective pole treatment and replacement program.

- 3 ▪ **Refine the program** – The program will be reviewed periodically and
4 modified to optimize work practices and the cost of maintenance vs.
5 replacement of the poles.

6
7 This general approach will be applied to various equipment on Vectren South's
8 system. In this example, we have both operating history in terms of the aging of
9 poles and their recent susceptibility to storm damage as well as industry data that
10 pointed us to the need to commence stepped up inspections and repairs. We
11 have already realized improvements from the program and expect more going
12 forward.

13
14 **Q. Generally describe Vectren South's planned enhancements to its**
15 **maintenance programs.**

16 A. Vectren South proposes a focused and thorough set of programs for inspecting,
17 repairing and maintaining our transmission and distribution system. These
18 programs include enhancements to substation, underground, overhead, line
19 clearance, and engineering programs. These activities, which will build upon our
20 existing level of maintenance efforts, will allow us to continue to provide safe and
21 reliable service, satisfy the needs of our customers and maintain the used and
22 useful status of our transmission and distribution assets consistent with good
23 utility practices.

24
25 **Q. You mentioned the need to increase field employees. Please explain**
26 **Vectren South's staffing plan.**

27 A. I will discuss this issue more fully as part of describing our increased
28 maintenance efforts. In 1993, Vectren South employed 71 Line Specialists.
29 Today, after a number of years of attrition, we employ 53 Line Specialists. This
30 has provided some cost savings, although our reliance on contract labor has
31 increased. By decreasing workforce, we have gained some efficiency and we
32 have studied system operations to determine the "right" number of employees we
33 need to run the system. In this proceeding we propose to staff to a level in

1 between these historic and current levels based on the knowledge we have
2 gained over the last several years.

3
4 **Q. What is Vectren South's overall objective in implementing the described**
5 **preventative programs which represent a proactive approach to system**
6 **operations and maintenance?**

7 A. Every one of these activities will accomplish at least one of the following
8 purposes: (1) preservation of existing facilities through greater maintenance; (2)
9 reliability through activities that reduce the likelihood of outages; and or (3) public
10 and employee safety.

11
12 **Substation Programs**

13
14 **Q. Please describe the substation inspection and maintenance programs for**
15 **which Vectren South seeks funding.**

16 A. Vectren South's existing system includes 127 substations. Vectren South has
17 considered system performance, reliability, and customer service when
18 determining that most substation inspection programs should be cycled on a five
19 year basis. For the size of Vectren South's system and the historical and
20 projected growth rates, five year cycles offer an appropriate interval for
21 inspecting system components. Historically, a five year inspection frequency has
22 not been consistently maintained due to focusing many of the available
23 resources on capital substation additions beginning in 2004. These substation
24 improvements not only deferred some substation maintenance but also added
25 equipment which will increase maintenance expense. Vectren South's
26 modification to this maintenance practice is consistent with our more proactive
27 approach and will lead to improved system performance.

28
29 Improvements necessary to obtain a five year cycle include the more frequent
30 inspection and testing of distribution and transmission substation breakers.
31 Additionally, Vectren South will paint all substations over a ten year period.
32 These substations were last painted in the mid 1980's. After completing the
33 proposed painting program, we anticipate that the substations will need

1 repainting approximately every 20 years. Vectren South will enhance existing
2 general inspection and maintenance activities such as: distribution SCADA
3 maintenance, danger signage inspections, and other various planned
4 inspections.

5
6 Vectren South currently performs infrared substation inspections as fill-in work
7 when schedules allow. Based on a preventive maintenance philosophy going
8 forward, Vectren South will additionally perform infrared scans at all electric
9 substations on an annual basis. These scans are useful in determining if the
10 equipment is carrying more than its designed load, if there are loose connections
11 and other potential faults, and thereby create the opportunity to mitigate potential
12 equipment defects before failure occurs. This program represents use of
13 technology to enhance our inspection capability. Also, Vectren South will
14 perform a thorough substation safety review to ensure that all substation security
15 measures are properly installed and functioning as designed.

16
17 **Q. What is the total annual pro forma expense adjustment for these substation**
18 **programs?**

19 A. The total annual substation program pro forma expense is \$1,005,479 as
20 depicted on Petitioner's Exhibit No. MSH-2, Adjustment A33.

21
22 **Underground Programs**

23
24 **Q. Please describe Vectren South's proposed enhancements to its general**
25 **distribution underground system and its downtown network system.**

26 Vectren South currently inspects facilities used to provide underground service
27 as we are performing normal work activities in the area. Vectren South proposes
28 to formalize a routine underground inspection program on an annual basis.
29 Vectren South will inspect facilities used to provide underground service on an
30 annual basis. These inspections will be to identify and correct matters such as
31 missing "Warning" decals and to ensure the equipment is properly bolted,
32 connected and protected. Any damage from tampering, passing lawn mowers,
33 or site erosion will be noted and corrected.

1
2 Downtown Evansville is served by an electric network system consisting of 41
3 underground vaults, 52 underground manholes, 66 transformers and associated
4 duct systems. Originally designed and built in the 1940's, this system has
5 recently experienced load growth from the redevelopment of buildings into
6 residential complexes and the addition of new office buildings. In the last 5
7 years, the electric load served by the network system has increased
8 approximately 10%. Vectren's Downtown Network Reliability effort will provide a
9 thorough review and inventory of the downtown network system including the
10 update of records, maps, circuit re-labeling, etc., and will convert the records
11 over to Vectren's existing GIS system. Based on a detailed analysis of the
12 network system and its changing configuration, our Network Maintenance
13 Program will be improved to support the delivery of service to the changing
14 downtown area.

15
16 **Q. What is the total annual pro forma expense of these underground**
17 **programs?**

18 A. The total annual pro forma expense adjustment is \$354,280 as shown on
19 Petitioner's Exhibit No. MSH-2, Adjustment A34.

20
21 **Overhead Facilities Maintenance Programs**

22
23 **Q. Please describe Vectren South's proposed overhead programs.**

24 A. The overhead system contains the facilities most exposed to the elements, and
25 often is the source of service outages. Vectren will enhance its programs to
26 inspect and maintain supporting structures and overhead circuitry to more
27 proactively identify and correct problems before system outages occur.

28
29 The inspection and maintenance program enhancements associated with
30 supporting structures include carefully selected activities which will routinely
31 evaluate and improve the structural integrity of the overhead system. The
32 specific activities include:
33

1 Pole Inspection Program: Vectren South conducted a pole inspection
2 program over the last two years. We inspected 41,688 poles,
3 approximately 35% of the system, which identified that 7% of the poles
4 inspected required either replacement or reinforcement. Vectren South is
5 actively addressing the poles identified as requiring remediation. Vectren
6 South will continue to perform an annual pole inspection of 10% of the
7 entire pole population annually. This pole inspection program will assist
8 with determining the remaining life of the poles and the results will be
9 utilized to continually refine the pole inspection program. Inspection data
10 will be recorded electronically by the inspectors and integrated into GIS for
11 subsequent use.

12
13 Transmission Structure Programs: Vectren South will paint all transmission
14 towers over a five year period. These towers were last painted in the mid
15 1980's. After completing the proposed painting program, we anticipate that
16 the towers will need repainting approximately every 20 years. Vectren
17 South will also replace old or missing warning signs with new bi-lingual
18 warning signs. There are 400 towers that will require the inspection and
19 installation of these new warning signs. This program is needed to verify
20 that the signs meet the NESC code "Rule 217 A" and latest specifications of
21 ANSI Z535.

22
23 Pole Guy/Grounding Program: Vectren South currently inspects pole guys
24 and grounds as we are performing normal work activities in the area.
25 Ensuring public awareness and the need to formally inspect our pole guys
26 and grounds warrants a more routine program. Therefore, Vectren South
27 will formalize a routine pole guy/grounding inspection program by
28 inspecting all of its pole guys and grounds over a 10 year period. Pole guys
29 will be inspected and repaired as required to ensure they are properly
30 grounded and insulated. Pole grounds will be inspected for corrosion and
31 connectivity. Yellow guy guards on the guy wires will be inspected and
32 replaced as needed. The results of the inspections will be used to
33 continually refine the pole guy/grounding program.

1
2 Pole Attachment Program: Numerous services such as telephone, cable
3 TV, broadband internet, and fiber optic data and voice cable use Vectren
4 South's poles. When Vectren South initiates a request to transfer cable or
5 telephone contacts on a pole that was replaced by Vectren South, follow-up
6 inspections are required to ensure that the pole attachments were
7 transferred to the new pole and meet attachment standards. These
8 inspections are driven by routine pole replacements typically required due
9 to storm damage, age, or accidents and are not affectively addressed by
10 current pole attachment contracts.

11
12 Overhead Reliability Program: Vectren South's enhanced overhead
13 reliability program consists of five coordinated components which include
14 an annual review of least reliable circuits, infrared examination of
15 distribution circuits, infrared examination of transmission switches,
16 inspection of all capacitors, regulators, and reclosers twice annually, and
17 animal guard inspections.

18
19 Vectren South plans to review its least reliable circuits, evaluating a
20 minimum of 5% (12) of the circuits annually. The circuits will be selected
21 based-on an evaluation of the circuit's reliability performance indicators.
22 These 12 least reliable circuits will be annually inspected in detail for
23 maintenance and design issues and improvements will be implemented.
24 The circuit reliability improvements will vary and may include revised fuse
25 coordination, additional line clearance, replacement of defective equipment,
26 additional lightning protection, replacements of grounds, and installation of
27 animal guards.

28
29 Annual infrared examinations of all mainline distribution circuits will be done
30 to detect hot spot anomalies. This helps inspectors determine if any
31 distribution circuits are carrying more than their designed load, if there are
32 loose connections, and serves to mitigate potential equipment defects and
33 eliminate faults before they occur. Vectren South has not routinely

1 performed infrared examinations of its main distribution feeders, however,
2 we feel that benefits from using this technology in our substations should be
3 extended to the distribution circuitry.

4
5 Additionally, Vectren South plans to perform infrared examinations of its
6 Transmission Switches on an annual basis. These scans are useful in
7 determining if the transmission switches are serving beyond their design
8 load, if there are loose connections, or if the switch requires repair or
9 replacement.

10
11 Vectren South currently inspects line capacitor banks, regulators, and
12 reclosers when schedules allow. To move to a more proactive approach,
13 Vectren South will formalize an overhead inspection program of all line
14 capacitor banks, regulators, and reclosers that will occur twice annually.
15 This allows for identification and replacement of failed or undersized
16 overhead equipment and ensures appropriate power quality.

17
18 Finally in the area of overhead facilities maintenance, Vectren South will
19 perform detailed animal guard reviews on circuits that have significant
20 outages caused by animal contact. This review will be focused on areas
21 covered by protective devices that operate frequently due to animal contact.
22 Animal contact is one of the most frequent causes of outages on utility
23 distribution systems.

24
25 Flyover Inspection Program: Similar to other regional utilities, and
26 consistent with good utility practices, Vectren South is implementing a
27 routine practice of flyover inspections for its electric delivery systems.
28 Vectren South currently performs flyover inspections approximately twice
29 per year. Our revised plan is to fly over approximately 900 miles of
30 transmission lines adding two 5-day patrols creating a quarterly program.

31

1 **Q. As part of the move to a more preventative approach through**
2 **implementation of the various described initiatives, does Vectren South**
3 **require additional field employees?**

4 A. Yes, we will need 10 new Line Specialists.
5

6 **Q. What has been your strategy in determining Line Specialist staffing levels**
7 **at Vectren South?**

8 A. Our long standing goal at Vectren South is to staff our field operations and
9 configure our crews to be as efficient and effective as possible. Over the last
10 several years, we have reduced the workforce in order to manage costs while
11 striving to provide quality customer service and maximize reliability. We have
12 been able to balance our reduced staffing levels and customer service needs
13 through the use of technology, improved work practices, and the increased use
14 of contract personnel.
15

16 **Q. What is your approach to workforce management at Vectren South?**

17 A. Vectren South attempts to put the most effective and qualified team in the field.
18 We routinely mix employees and contractors in an attempt to optimize crew skill,
19 experience, timing, and location of crews relative to the work and work locations.
20 We have found that maintaining a balance in staffing between Vectren South
21 personnel and contract crews, especially for construction work and major
22 maintenance initiatives, can reduce overall costs while still meeting quality
23 standards. If we are over staffed with Vectren South employees, fixed labor
24 costs rise and employees may not be adequately utilized on a day to day basis.
25 On the other hand, if we rely too heavily on Contractors, we risk the loss of
26 valuable internal technical skill and experience.
27

28 **Q. Why has Vectren South evaluated its staffing levels associated with Line**
29 **Specialists and determined its need to increase that level?**

30 A. The number of Vectren South Line Specialists has declined over time to a level
31 that is marginally acceptable. We now make extensive use of contractors and
32 feel we need to better balance contractor usage and Vectren South personnel. It
33 is our judgment that our current workforce balance of contractors compared to

Vectren South employees is too heavily weighted toward contractors. The right contractor/employee mix is critical in assembling an effective and efficient field workforce. Therefore, we have determined that Vectren South needs to add 8 to 12 Line Specialists to achieve the desired contractor/employee mix. Vectren South has included the addition of 10 Line Specialists in our rate case pro forma.

Q. Is there a risk to Vectren South if the Line Specialist staffing level is not increased?

A. Yes. A skilled and experienced staff of Vectren South Line Specialists is critical to maintaining quality customer service, and maintaining the necessary detailed operating knowledge and experience with the Vectren South system. Although contract crews are doing a good job in supporting our construction needs, especially as a supplemental workforce, we believe an increase in the total number of Vectren South Line Specialists is necessary. Without the addition of these line specialists we expect our dependence upon contract forces to only increase which will reduce our in-house expertise and experience to what we believe will be an unacceptable level.

Vectren South needs to retain core skills in sufficient numbers to be able to reliably and effectively maintain our system into the future. Contractor crews can provide many of these skills but due to their transient nature, a contractor crew may not be readily available to provide critical maintenance and operations functions. In the event of a major regional disaster, such as the tornado damage we experienced last year, it is important that we are able to deploy sufficient personnel to insure public safety. The availability of contractor crews or mutual assistance during major regional events may be limited and therefore may impact our ability to respond effectively. Specific operating experience with the Vectren South system and knowledge of customer requirements is important to our ability to provide a high-level of customer service and reliability.

Q. Why is the addition of Line Specialists warranted at this time?

A. The addition of Line Specialists is warranted at this time to ensure we have adequate staffing levels. This is especially true if we are to successfully engage

1 in the many new and proactive programs I have described above. The long
2 training time required to bring Line Specialists into the field means that
3 candidates hired in the near future may not be fully productive for 6 to 8 years.
4 These new employees will enter the apprenticeship program here at Vectren
5 South and undergo extensive training over the next several years. As the Line
6 Specialists move through their training and become more capable and
7 productive, we may be able to gradually reduce contractors while meeting our
8 increased maintenance and operations requirements in the future. By the time
9 these employees are fully trained and productive our electric system will have
10 expanded, become more complex, and more maintenance and operations work
11 will be required. It is important to start hiring these employees soon so we can
12 meet our future requirements. Additionally, these new hires better position
13 Vectren South in the event that unanticipated attrition occurs beyond the aging
14 workforce issue.

15
16 Contractors are facing the same aging workforce issues and, therefore, cannot
17 guarantee they will fully meet our needs into the future. Hiring Line Specialists
18 will help position us to meet our customer's needs into the future.

19
20 **Q. How does the addition of these 10 Line Specialists relate to the additional**
21 **Line Specialists sought in response to the aging workforce initiative**
22 **discussed by Vectren South witness William S. Doty?**

23 **A.** The 10 additional Line Specialists I discuss in this pro forma adjustment are
24 intended to partially replace employee attrition that has already occurred.
25 Vectren South Witness William S. Doty's aging workforce testimony outlines
26 Vectren South's plan to replace anticipated Line Specialist retirements over the
27 next several years. The aging workforce hires and the "re-staffing" hires to have
28 a larger baseline number of field employees are separate adjustments in this
29 case. All of these new employees are needed to create a future Vectren South
30 workforce that is ready to serve our customers effectively and address the
31 challenges ahead in a timely fashion.

32

1 **Q. Please further describe how these Line Specialists will charge their time as**
2 **new Vectren South employees.**

3 A. Vectren South will add 10 Line Specialists and move them into the
4 apprenticeship training program immediately. Due to heavy training and
5 development in the first several years, we expect the new employees to spend
6 approximately 40% of their O&M time in a combination of classroom training and
7 a heavy exposure to field training. The remaining 30% of the Line Specialists'
8 O&M time, due to inexperience, will initially be executed at a 50% productivity
9 rate. Initially, the apprentices will necessarily work around de-energized lines for
10 safety purposes, but eventually will have to learn to work on energized lines,
11 transformers, regulators, switchgears, capacitors, and other equipment. They
12 will have to demonstrate proficiency in work activities, work practices, and
13 especially the use of safety equipment and safe work practices as they make
14 their way through apprenticeship training. After a period of six to eight years,
15 they may achieve the journeyman classification and attendant level of proficiency
16 in the work activities and results. At this point in their careers they will be fully
17 productive and safe workers that can respond quickly to serious and minor
18 outages as well as operate and maintain Vectren South's electric distribution and
19 transmission systems. For an extended period they cannot displace critical work
20 currently performed by other employees and contractors we are using.

21
22 **Q. Is this a reasonable adjustment?**

23 A. Yes. As Vice President of Energy Delivery, I am responsible for keeping our
24 customers' power on and getting it back on after storms and other outages. I
25 cannot do this without an adequately trained, equipped, and balanced workforce
26 in field operations. These additional 10 Line Specialists are essential for
27 providing responsive and high quality customer service in the future as well as
28 maximizing public and employee safety.

29
30 **Q. If Vectren South adds these employees, why have you not reflected any**
31 **decreased contractor costs?**

32 A. As discussed previously, the Line Specialist will not be immediately productive
33 and will not reach full productivity for 6 to 8 years. After allocating approximately

1 40% to training, the remaining time charged to operating and maintenance
2 expense is merely 15% after factoring-in their 50% productivity rate. Normal
3 yearly workload increases, and operating/maintenance increases driven by
4 facility additions and system complexity will require the commitment of this
5 additional labor.
6

7 **Q. What is the total pro forma cost of Vectren South's proposed overhead**
8 **facilities maintenance programs?**

9 A. The total pro forma annual expense of these overhead programs is \$3,160,733
10 and is included in the amount shown on Petitioner's Exhibit No. MSH-2,
11 Adjustment A36.
12

13 **Line Clearance Program**
14

15 **Q. Please describe Vectren South's proposed line clearance program.**

16 A. Tree contacts are a major source of outages on distribution and transmission
17 systems. If trees are not trimmed on a regular basis, the result is outages and
18 poor service even under relatively mild weather conditions. Events such as an
19 ice or snow storm and heavy winds can easily cause energized conductors to
20 come in contact with tree limbs. The tree, which has very high water content, is
21 an excellent conductor and upon contact grounds the energized line creating a
22 current fault. The fault trips a protective device such as a recloser, fuse, or
23 breaker and the result is a momentary, if not extended, outage.
24

25 An excellent example of what can happen if a tree contacts an energized circuit
26 took place in August of 2003 when a loaded FirstEnergy transmission line in Ohio
27 sagged into the trees (sagging is a normal operating condition for highly loaded
28 transmission lines) causing a tree contact that triggered a now legendary
29 extended outage. It is estimated that 50 million customers in the U.S. and
30 Canada were affected by that outage as 263 power plants (531 units) were
31 tripped off line. This is a stark example, but it does illustrate the seriousness and
32 need for timely and cyclical tree trimming.
33

1 The AEGIS report, mentioned previously, recommends a five year tree trimming
2 cycle for the Evansville area. Vectren South agrees with the AEGIS
3 recommendation and concurs that it is cost effective. We currently complete line
4 clearance with a focus on keeping the transmission lines clear per our vegetation
5 management policy on file with NERC and keeping the three-phase mainline
6 distribution circuits clear. We clear the lateral portions of the distribution circuits
7 largely on an as needed basis. However, we are currently not maintaining a five
8 year clearing cycle on our distribution circuits. Our plan is to address each
9 distribution circuit frequently enough to achieve a five year cycle. Achieving and
10 sustaining the five year cycle will require an additional \$1,860,232 annually for
11 the next four to five years. An additional \$20,000 will be required annually for
12 transmission easement foliage removal. Vectren South contracts for
13 performance of nearly all of its line clearance with a few employees on staff for
14 hot spotting, or ad hoc causal-based trimming. The resulting pro forma line
15 clearance expense is \$1,880,232 as shown on Petitioner's Exhibit No. MSH-2,
16 Adjustment A35.

17
18 **ENGINEERING SUPPORT**
19

20 **Q. In order to implement the programs described above, does Vectren South**
21 **Electric require incremental personnel with expertise in system**
22 **operations?**

23 A. Yes. We plan to hire an EMS/SCADA Transmission Engineer and one Electric
24 Distribution Planning Engineer.

25
26 **Q. Please discuss the need for the EMS/SCADA Transmission Engineer**
27 **position.**

28 A. Even though Vectren South is a member of MISO, there are still significant
29 transmission system responsibilities remaining in the control center related to the
30 Energy Management System (EMS) and System Control and Data Acquisition
31 (SCADA) systems. This position will support both critical systems, provide
32 dispatcher training on the systems, and will oversee the training simulator. The
33 EMS/SCADA engineer is also needed to provide back-up support for Vectren

1 South Electric's recently implemented electric distribution SCADA system. The
2 addition of this new system and its required maintenance and future expansion
3 also supports our need for increased technical support.
4

5 **Q. What is the annual expense for this position?**

6 A. The additional annual expense for this position is \$99,300 which is included in
7 Petitioner's Exhibit No. MSH-2, Adjustment A21.
8

9 **Q. What other staffing changes do you propose for the engineering group?**

10 A. Vectren South Electric is also planning to hire one electrical distribution planning
11 engineer. This engineer will focus on planning Vectren South's electric
12 distribution reliability improvement projects. The cost of this engineer is \$35,000
13 annually and is included in Adjustment A21 as shown in Petitioner's Exhibit No.
14 MSH-2.
15

16 **Reliability Studies and Planning**

17 **Q. Will Vectren South be studying its overall distribution system for load
18 growth implications?**

19 A. Yes. Vectren South Electric plans to complete a comprehensive long range
20 master planning study of its entire distribution system. We will examine circuits
21 and focus on area studies in which load growth is assessed on a planned versus
22 actual basis. In addition, the long range nature of the study will allow Vectren
23 South to much more effectively plan our future improvements such as additional
24 distribution feeders, feeder upgrades, substation transformer upgrades, and
25 possibly new substations. The long range focus of the study is critical to the
26 future reliability of Vectren's electrical distribution system. Vectren South makes
27 every attempt to forecast load growth as accurately as possible. It is, however,
28 impossible to be 100% accurate in total or by study area. We rely on a periodic
29 planning study to determine if load has materialized in areas where we did not
30 anticipate it. If that has happened, we must design, budget, and complete
31 system upgrade projects that will allow Vectren South to provide the reliable
32 service its customers expect.
33

1 Q. **Are these master plan studies supportive of efforts to maintain quality and**
2 **reliability in electric operations?**

3 A. Yes. While Vectren South has not done a system-wide electric master planning
4 study since 1993, it is accepted good utility practice to do them on a periodic
5 basis. Vectren plans on performing this study before year-end 2006. The master
6 plan study is a first step to make certain that our system will be up to future
7 challenges. As part of our focused effort to enhance service quality, we
8 anticipate repeating this type of study on a three year cycle.

9
10 Q. **Do you plan an initiative to improve electric system performance by**
11 **examining protective devices?**

12 A. Yes. Vectren South will conduct an Electrical System Protective Device
13 Coordination Study. As Vectren South's electric operation has grown and
14 evolved over time, its operating characteristics have changed due to where load
15 has grown and how feeders, primary, secondary, and service cable have been
16 installed and configured. So much has changed that it has become evident that
17 a comprehensive overview of all distribution system protection devices is now
18 necessary to ensure a robust and reliable distribution system. We propose to
19 examine each circuit to determine whether protective device settings or
20 specifications should be changed. This examination and resulting adjustments
21 will improve system performance and reliability. Customer service will most
22 certainly be enhanced. In addition, we will likely discover the need to upgrade
23 equipment or make other modifications to the system that will further enhance
24 reliable service.

25
26 Q. **What is the amount of the reliability studies and planning pro forma**
27 **adjustment?**

28 A. The pro forma adjustment for the reliability studies and planning initiatives is
29 \$102,500 consisting of outside contractor labor costs and expenses which are
30 included in Petitioner's Exhibit No. MSH-2, Adjustment A37.

31
32 Q. **Does this complete your testimony?**

33 A. Yes it does.

**SOUTHERN INDIANA GAS AND ELECTRIC COMPANY
d/b/a VECTREN ENERGY DELIVERY OF INDIANA, INC.
(VECTREN SOUTH – ELECTRIC)**

IURC CAUSE NO. 43111

**DIRECT TESTIMONY
OF
RONALD G. JOCHUM
VICE PRESIDENT POWER SUPPLY**

ON

**GENERATION FLEET OPERATIONS AND
RELATED PROFORMA ADJUSTMENTS, AND
THE PROPOSED
GENERATION COST AND
REVENUE ADJUSTMENT (GCRA)**

SPONSORING PETITIONER'S EXHIBITS RGJ-1 THROUGH RGJ-11

Direct Testimony of Ronald G. Jochum

Q. Please state your name and address.

A. Ronald G. Jochum
One Vectren Square
Evansville, Indiana 47708

Q. What position do you hold with Petitioner Southern Indiana Gas and Electric Company d/b/a Vectren Energy Delivery of Indiana, Inc. ("Vectren South" or "Company")?

A. I am Vice President – Power Supply.

Q. Please describe your educational background.

A. I received a BS in Electrical Engineering from the University of Missouri at Rolla in 1969. I have a certificate in Executive Development from the University of Illinois, which is essentially a concentrated Masters in Business. I also have a certificate in construction management from Texas A&M University. I was certified as a registered professional engineer in the State of Illinois in 1975.

Q. Please describe your professional experience.

A. I have 36 plus years of varied experience in the power generation business through the following assignments:

1970-93	Various Positions	Illinois Power Co.
1993-94	Director Power Production	Vectren South
1994-Pres.	Vice President - Power Supply	Vectren South

Q. What are your present duties and responsibilities as Vectren South's Vice President-Power Supply?

A. I have managerial and oversight responsibilities for Vectren South's power generation fleet. I am responsible for my unit's financial oversight and its calculation of and adherence to the generation budget. I am also responsible for the budgeted and actual operation and maintenance expense of the power generation fleet. I manage the power generation fleet's operations, maintenance, and am ultimately responsible for its personnel decisions. My financial decisions

1 regarding operations and budgeting are relied upon by other officers and
2 executives at Vectren South. In addition, I have responsibility for the production
3 and purchase of electric energy necessary to meet the needs of our jurisdictional
4 customers. I am responsible for completing these functions while ensuring final
5 operation and compliance with the environmental requirements of all applicable
6 agencies. I am responsible for the development and implementation of Vectren
7 South's plan to comply with state and federal environmental regulations and
8 rulings restricting the emission of all source pollutants from Vectren South's
9 generating units.

10
11 **Q. Have you previously testified before this Commission?**

12 A. Yes. I participate in Vectren South's quarterly Fuel Cost Adjustments both as a
13 witness and provide oversight in the calculations and accuracy of information
14 provided by my unit. I have provided financial costs information in IURC
15 proceedings regarding pollution control equipment and the tracked recovery of
16 environmental compliance cost. Most recently I have presented testimony in
17 Vectren South's Qualified Pollution Control Property Cost ("QPCP") Construction
18 Rider proceedings. I presented testimony in the Midwest Independent System
19 Operator (MISO) Day-2 proceeding in Cause No. 42685.

20
21 **Q. What is the purpose of your testimony?**

22 A. My testimony describes the circumstances involved in operating Vectren South's
23 generation fleet, including details regarding past performance, projected
24 availability and reserve margins, and costs associated with continued operation
25 and maintenance of the units. I will describe Vectren South's loss of its municipal
26 customers as firm long-term sales customers. I will support Vectren South's
27 proposal to share margin from non-firm wholesale power sales with customers
28 and to track certain generation related costs, through a proposed Generation
29 Cost and Revenue Adjustment ("GCRA") as more fully described below and in
30 the direct testimony of Petitioners' witness Jerrold L. Ulrey. My testimony also
31 addresses pro forma adjustments in the following areas:

32
33 I. Turbine and Generator Inspection and Maintenance. The 2006 level of

1 turbine and generator inspection and maintenance will be representative of
2 ongoing expense. The test year is not representative of ongoing turbine and
3 generator maintenance expense because such activities were largely conducted
4 just before and just after the test year. Because this maintenance is critical to
5 continued unit performance, and is accepted utility operating practice, a pro
6 forma adjustment is necessary to account for the expected annual cost of this
7 activity during the life of these rates.

8
9 II. Boiler Maintenance Expense. The test year level of boiler
10 maintenance expense is not representative of the expense that will be incurred
11 on an annual basis through the life of these rates. I support the calculation of the
12 annual pro forma expense adjustment for boiler maintenance.
13 I also describe why Vectren South needs to employ a new full time boiler
14 maintenance engineer and an electric engineer for our generation operations.

15
16 III. AB Brown Station Flue Gas Desulphurization (FGD) Structural
17 Maintenance. I describe the structural maintenance program which must be
18 implemented to remediate the deteriorating condition of the Brown Units FGD
19 steel structure and the associated ongoing, annual expense.

20
21 IV. Environmental Chemicals. I describe the use of chemicals consumed
22 by our pollution control equipment in order to comply with air emission standards,
23 as well as the fluctuating usage level and price of these chemicals. Given
24 uncertainty around the year to year cost of the various chemicals, which in part is
25 driven by fuel prices, as well as the recent significant escalation in this expense,
26 we propose to put the pro forma expense amount in base rates and then pass
27 through increases and decreases in these large expenses associated with
28 environmental compliance on a dollar for dollar basis through the proposed
29 Generation Cost and Revenue Adjustment (GCRA).

30
31 V. Purchased Power. Demand costs associated with purchased power
32 are material and variable, and Vectren South proposes to use the GCRA as a
33 tracking mechanism to recover changes in their cost from the base rate amounts.

1
2 VI. Ash Disposal Costs. I describe the Company's proposal to save certain
3 capital costs and operating expenses associated with ash disposal by delaying
4 the need to develop new ash landfills through a plan to dispose of coal fired
5 generation ash as fill in the Cypress Creek Coal Mine. To effectuate this
6 beneficial concept, we must incur certain disposal costs in the short term. I
7 propose that we incur these costs in order to achieve the savings.

8
9 VII. Generation Aging Workforce Related Costs. As Vectren South witness
10 William S. Doty describes in detail, the advancing age of baby boomers will result
11 in a dramatic number of retirements reducing the number of experienced
12 generation personnel. Accordingly, we must hire new personnel and have them
13 fully trained in time to fill the vacancies left by our retiring employees. I present
14 the expense adjustment to support that effort.

15
16 VIII. Fuel Handling Costs. Fuel and other costs of handling coal have
17 increased due to fuel price escalation and must be fully recovered in base rates.

18
19 IX. Culley Unit 1 Shutdown/Employee Redeployment. With the retirement of
20 Culley Generating Unit 1, some operating costs will be eliminated and, pending
21 discussions with the union, it is our plan to redeploy the experienced employees.
22 Such redeployment will decrease production overtime cost.

23
24 X. Culley Unit 3 Fabric Filter. Our installation of the fabric filter at Culley Unit
25 3 is on schedule to be complete by December 2006. The cost of this Project will
26 be approximately \$49 million. We will roll this completed project into rate base.

27
28 **Wholesale Transactions**

29
30 **Q. Please describe how Vectren South's electric wholesale transactions have**
31 **changed since its last rate case.**

32 **A.** At the time of its last rate case filed in 1993, Vectren South made firm wholesale
33 sales to six municipal customers (Jasper, Huntingburg, Tell City, Cannelton,

Boonville, Ferdinand) under long term contracts that dated back to 1976, as well as a relatively small amount of non-firm wholesale sales to other interconnected utility customers. Over the past 12 years, the electric industry has experienced dramatic changes as a result of a series of Federal Energy Regulatory Commission (FERC) orders that have, similar to FERC's previous efforts in the gas industry, supported its express policy to create more transparent, competitive and robust regional markets for wholesale energy transactions. As described below, in response to FERC's initiatives, culminating to date in the creation of the Midwest Independent System Operator (MISO) Day Two energy market, for Vectren South two significant changes have occurred over this time period:

1. The municipalities Vectren South previously served via long-term contracts have in one case already selected another energy provider and in all other cases now regularly conduct competitive solicitations to obtain offers from alternative suppliers and have contracted only on a short-term basis with Vectren South to allow themselves the opportunity to either annually or bi-annually consider alternative sources of energy; and
2. Over time, Vectren South's low cost coal units have been able to provide energy to sell in the non-firm wholesale market, resulting in much greater sales volumes and margins than those experienced a decade ago.

Q. Are the changed circumstances you have described continuing to evolve?

A. Yes. With respect to the municipal customers traditionally served by Vectren South, of the three largest municipal customers, one (Tell City) has entered into a long-term relationship with the Indiana Municipal Power Authority (IMPA) which will supply all of its energy needs after expiration in 2007 of an existing contract with Vectren South, and at least one other is using IMPA in a consulting role. All of these customers continue to consider competitive alternative offers to supply their energy requirements.

As stated earlier, Vectren South's participation in the wholesale market as a seller has been driven almost entirely by the availability of its lower cost coal fired generation. In a typical year, Vectren South's coal fired units supply over 99% of

1 the energy required to serve retail customers and support almost all of its
2 wholesale opportunity. As described hereafter, the level of availability of this
3 generation in the future will to a large extent determine the future level of
4 wholesale sales. Our coal units in 2006 represent a total of 1056 MWs, which
5 with the retirement of Culley Unit 1 will decrease on January 1, 2007 to 1010
6 MWs. Sales results will also be driven by conditions in the MISO energy market,
7 as well as several other unpredictable variables such as emission allowance
8 prices and fuel prices.

9
10 **Municipal Contracts**
11

12 **Q. Who are Vectren South's municipal customers?**

13 A. Vectren South is currently providing wholesale electric service to Jasper
14 (80MWs), Huntingburg (30MWs), IMPA (38MWs on behalf of Tell City), and
15 Ferdinand (10MWs). Vectren South also now separately serves Cannelton
16 (5MWs), which historically had taken its energy under the Tell City contract.
17 Cannelton's distribution system is connected to the Tell City electric system. At
18 the time of the last rate case, all of these municipalities were supplied by Vectren
19 South under very long-term contracts. That is no longer the case. Boonville is
20 now served as a retail load under a 25 year Lease Agreement with the City of
21 Boonville whereby Vectren South operates the distribution system.

22
23 **Q. Please provide the history and current status of Vectren South's service
24 relationship with Jasper.**

25 A. The City of Jasper is Vectren South's largest municipal customer, with an annual
26 energy requirement approximately equal to the combined load of all of the other
27 municipalities served by Vectren South. At peak, Vectren South provides up to
28 80 MWs of capacity to Jasper. The transformation of the nature of Vectren
29 South's relationship with the City of Jasper provides an excellent example of the
30 fact that the municipal customers have numerous market options that they
31 annually consider as alternate sources of supply, rendering the relationship with
32 Vectren South essentially short term in nature.

33

1 For the period of 1976-1996, Vectren South provided Jasper with its energy
2 requirements under a single long-term full requirements contract. This period
3 represented an era where such customers did not have alternative options.
4 Beginning in 1997, Vectren South successfully renewed its contract with Jasper,
5 but did so under a five year service agreement. In 2002, Jasper considered
6 other market options before selecting Vectren South to provide service under a
7 new two year contract. In 2004 and 2005, Vectren South served Jasper under
8 negotiated one year contracts, as Jasper continued to evaluate competitive
9 alternatives. In 2006, Jasper informed Vectren South that like Tell City, it was
10 considering a relationship with IMPA. Jasper has also recently solicited offers,
11 and Vectren South has submitted a competitive offer to provide service under a
12 new one year contract for 2007.

13
14 Vectren South has managed to retain Jasper as a customer since 2002, but only
15 by negotiating short-term contracts, at discounted rates that while competitive
16 with the market and above marginal cost, do not provide full recovery of allocated
17 costs. Given Jasper's ongoing consideration of competitive offers, Vectren South
18 considers Jasper to be a short term customer, cannot plan on retaining Jasper as
19 a firm customer, and in the near future, will likely lack sufficient on system
20 generation to provide for Jasper's capacity requirements. As discussed
21 hereafter, if Jasper accepts Vectren South's service offer for 2007, Vectren South
22 will provide 100% of the contract margin to retail customers after receipt of an
23 order in this case.

24
25 **Q. Please provide the history and current status of Vectren South's service**
26 **relationship with Huntingburg.**

27 **A.** The City of Huntingburg is Jasper's neighbor and its relationship with Vectren
28 South closely resembles recent dealings with Jasper. Huntingburg is Vectren
29 South's third largest municipal customer with a contract peak load of 30 MWs.
30 Like Jasper, Vectren South served Huntingburg under a single long-term contract
31 that originated in 1976 and remained in place through 2001. Thereafter, the City
32 and Vectren South entered into a three year service contract. Then, after
33 Huntingburg solicited competitive proposals, it entered into a two year contract

1 with Vectren South terminating at the end of 2006. Similar to Jasper, Vectren
2 South succeeded in retaining Huntingburg by making an offer well below its fully
3 allocated costs. In 2006, IMPA informed Vectren South that Huntingburg had
4 hired IMPA as a consultant to assist in review of alternative service offers. In
5 June 2006, Huntingburg issued its latest RFP. Vectren South has responded to
6 the RFP by offering to provide supply to Huntingburg for one year (2007). Like
7 Jasper, Huntingburg can no longer be considered a long term customer of
8 Vectren South. If Huntingburg accepts Vectren South's offer for service in 2007,
9 contract margins would be provided to customers just like any Jasper margins
10 post-rate case.

11
12 **Q. Please provide the history and current status of Vectren South's service**
13 **relationship with Tell City.**

14 A. Tell City is no longer a customer of Vectren South. Tell City had been Vectren
15 South's second largest municipal customer, with a peak demand of 38 MWs.
16 Tell City received all of its energy from Vectren South under a 20 year contract
17 from 1976 through 1996, and then the parties entered into a 10 year contract.
18 However, in 2002 prior to expiration of the 10 year contract, Tell City entered into
19 a long-term membership agreement with IMPA. Thereafter, Vectren South
20 agreed to amend the existing service agreement, with Vectren South providing
21 power to IMPA on Tell City's behalf. The amendment also modified the rates and
22 extended the service agreement through December 2007. Currently, IMPA
23 serves Tell City, with Vectren South acting as a source of capacity and energy for
24 IMPA. Now, IMPA, as service provider to Tell City, determines how best to serve
25 its customer. Thus, Tell City is no longer a customer of Vectren South, and
26 Vectren South's contract sales to IMPA will end with the current contract.

27
28 **Q. Please provide the history and current status of Vectren South's service**
29 **relationship with Ferdinand.**

30 A. The City of Ferdinand is a much smaller municipal customer, with a peak
31 demand of 10 MWs. After the end of the 1976 long-term contract, Vectren South
32 and Ferdinand negotiated a ten year contract. In 2003, notice of termination was
33 timely given, so the contract will end in March 2008. Vectren South and

1 Ferdinand have not discussed future terms, but with the continued development
2 of the energy market, there is no basis to conclude that Ferdinand will not, like
3 the other municipalities, consider its competitive options as the termination date
4 approaches. Vectren South does not plan on retaining Ferdinand as a long term
5 customer.

6
7 **Q. Please provide the history and current status of Vectren South's service**
8 **relationship with Cannelton.**

9 A. The City of Cannelton is a small municipal customer with a peak demand of 5
10 MWs. While served for many years under the long-term Tell City contract,
11 Cannelton did contract directly with Vectren South in 1997, and then renewed its
12 contract in 2003. That energy contract expires on December 31, 2007. Vectren
13 Energy expects that Cannelton has been approached by IMPA given its tie to the
14 Tell City system. Vectren South does not plan to serve Cannelton as a long term
15 customer after the existing contract expires.

16
17 **Q. Based on the transformation of the nature of the relationships with the**
18 **municipalities served by Vectren South, how does Vectren South propose**
19 **to allocate rate base and expenses in this proceeding?**

20 A. In its previous base rate proceeding, given the nature of these sales under the
21 long-term municipal contracts which were over 15 years old at the time of the
22 case and had several years remaining prior to expiration, Vectren South
23 allocated a proportionate share of its rate base and operating expenses to
24 providing firm service to its municipal customers. As a result, rates for retail
25 customers were based upon approximately 90% of Vectren South's rate base
26 and expenses, and Vectren South relied upon its ongoing long term contractual
27 relationships with the municipalities to recover its allocated costs, including a
28 return on the allocated portion of its plant.

29
30 Because Vectren South can no longer be considered the long-term supplier of
31 energy to these municipal customers, who on an annual basis have been
32 considering alternative suppliers (or have already contracted with IMPA), and can
33 competitively procure energy from any market participant at the expiration of their

1 short-term contracts, Vectren South can no longer allocate rate base and
2 expenses to these customers as if they were still long-term sales customers.
3 Rather, retail rates set in this case must reflect the full cost to provide retail
4 service.

5
6 **Q. As the short-term municipal contracts expire mostly in either 2006 or 2007,**
7 **will Vectren South be left with excessive generation?**

8 A. No, Vectren South's low cost, coal fired baseload generation as well as its gas
9 fired peaking plants will be fully used to serve its retail customers. As discussed
10 more hereafter, as the short-term municipal contracts expire, Vectren South is
11 retiring its 51 year old 42MW Culley 1 coal-fired unit. In its 2005 Integrated
12 Resource Plan, Vectren South projected that without serving any municipal load,
13 it will need to procure 100MW of power in 2010 to replace an expiring low cost
14 purchase power contract in order to retain more than a 15% reserve margin in
15 2010 and 2011. Thus, the allocation of all plant to retail load provides retail
16 customers with an appropriate amount of capacity, including full access to all of
17 Vectren South's on-system generation.

18
19 **Q. Will Vectren South customers benefit from a full allocation of Vectren**
20 **South's baseload and peaking generation?**

21 A. Yes. As of January 1, 2007, Vectren South will have 1010MWs of baseload coal
22 fired generation. Under the existing ratemaking approach, municipal customers
23 have been allocated 10% (101MWs) of that generation. Recently, in winter
24 months, Vectren South's retail load has on occasion exceeded 900MWs,
25 reaching a high of 948MWs in January 2003. This illustrates that winter peak is
26 nearing the capacity of Vectren South's coal-fired baseload capacity. Now, on
27 hot summer month days, Vectren South's firm retail load can easily exceed its
28 coal-fired capacity. For example, on May 31, 2005, Vectren South's firm load hit
29 1073MWs, meaning our low cost coal generation was not sufficient to meet
30 demand. Obviously, throughout the peak cooling months, baseload coal is well
31 short of peak loads. On August 10, 2006, we set a new system peak of 1300
32 MWs. Going forward, all 1010MWs of coal generation will be dedicated to serve
33 retail load. Gas fired peaking and market purchases will be dispatched to meet

1 remaining requirements. Gas prices, even in warm months, have been trending
2 upward. To the extent retail customers have the additional 101 MWs of on-
3 system coal generation available to serve their needs, this should benefit them
4 by avoiding use of more expensive supply side resources, not only in the peak
5 season, but also at other times of the year. Similarly, our entire on-system
6 peaking unit capability will also be devoted to serving our retail load. This on-
7 system generation should be the most reliable in terms of avoiding potential
8 transmission congestion and associated market congestion cost.
9

10 **Q. What does Vectren South propose to do with margins from the existing**
11 **short-term municipal contracts prior to their expiration dates?**

12 A. Vectren South will honor its existing contracts with IMPA (on behalf of Tell City)
13 and Cannelton through 2007, and its contract with Ferdinand through March
14 2008. To the extent Jasper and/or Huntingburg select Vectren South's
15 outstanding offers for service in 2007, Vectren South would also honor those
16 commitments. Subsequent to receiving an order in this rate case in 2007, 100%
17 of the margins from these existing short term municipal contracts would be used
18 as an offset against retail charges. A credit reflecting these margins would be
19 provided to customers via the Generation Cost and Revenue Adjustment (GCRA)
20 proposed herein. Given the around the clock firm energy requirements nature of
21 these 24 by 7 short-term contracts, Vectren South obtains prices from these
22 transactions that, on average, will likely be better in total than prices achieved
23 from other non-firm wholesale transactions. Therefore, customers will benefit
24 from receiving these prices via the GCRA during the short period the contracts
25 remain in place. Thereafter, to the extent Vectren South wins any future
26 municipal bids, such transactions would be subject to the same wholesale margin
27 sharing mechanism described below. In this manner, Vectren South will have an
28 incentive to maximize wholesale margins, whether derived from short-term
29 municipal contracts or through other non-firm wholesale transactions.
30

31 **Q. If Vectren South submits bids in response to future municipal RFPs and is**
32 **the successful bidder, will that impact the reallocation of on-system**
33 **resources to retail customers?**

1 A. No. To the extent post-rate case Vectren South succeeds in re-contracting with
2 any of the municipalities on a short-term basis (1 or at most 2 year), such new
3 wholesale transactions will be no different from any other short-term wholesale
4 opportunity sales and therefore economic dispatch of power will apply to these
5 sales. Thus, all low cost generation will be used first to serve retail customers.
6

7 **Q. In your opinion, is it likely that Vectren South will be able to win future bids**
8 **to serve any of the municipalities as customers?**

9 A. No, not very likely. In recent years, to compete with the municipal customers'
10 alternative options, Vectren South's bids have reflected prices that have been
11 below fully allocated cost. Further, after this case, as existing contracts expire
12 we will no longer allocate a firm portion of lower cost generation to serving these
13 customers. Unlike the past where we allocated 10% of our plant to serve these
14 customers because that plant and related costs was not included in base rates,
15 going forward we cannot treat these customers similar to native load customers.
16 As a result, it will be even more difficult for Vectren South to compete with all the
17 merchant suppliers, entities like IMPA, and other larger market players.
18 Moreover, with the increasing role of IMPA in either providing power or acting in
19 an advisory role to most of the municipals, Vectren South has already lost its
20 traditional role as energy "partner" with the cities.
21

22 **Q. Prospectively, why should margins, if any, obtained from new transactions**
23 **with municipal customers be treated the same as margins obtained via**
24 **other non-firm wholesale sales?**

25 A. As established by the discussion of the transformation of Vectren South's
26 relationship with its former long-term municipal customers, any such sales will be
27 essentially short-term opportunity sales in nature. Thus, there is no reason to
28 treat them differently. Further, as Vectren South considers responding to any
29 future bid opportunities, it must weigh the risk and profitability of a municipal sale
30 against any other sales opportunities it would have, including selling into the
31 MISO market. The same incentive in terms of margin sharing should exist for all
32 types of sales, otherwise Vectren South is unlikely to choose a sales opportunity
33 from which it derives no financial benefit.

Non-firm Wholesale Opportunity Sales

Q. Please describe the increase in the level of non-firm wholesale sales over time.

A. Vectren South's 1993 test year contained non-firm wholesale margin of under \$1 million. As a result of market evolution, as well as efficient operation of its generation, Vectren South has done an excellent job of supporting significant wholesale sales over the past several years. During the twelve month test year period ended March 31, 2006, Vectren South's non-firm wholesale margins totaled \$16.0 million. While such margins are very significant, they are impacted by a number of variables such as weather, market prices, fuel cost, emission allowance market prices, transmission congestion and market competition. Many of these variables are largely outside the control of the Company. Further, because this margin is so closely tied to the periodic availability of excess generation primarily from the coal fired fleet, as the demand of our jurisdictional customers continues to increase at the same time that the capacity (Culley Unit 1 retirement) and availability (more planned outages) of these units declines, wholesale margins will likely decline over the next several years. Based on the pro forma period, this predicted decline has already begun. For this reason, Vectren South believes the risk associated with such margins should be shared, so that wholesale margins are used to offset customer costs, and a share provided to the Company as an incentive to optimize its generation and reward the Company for the risks associated with such sales.

If instead the entire test year level of non-firm wholesale margins were prospectively guaranteed and used to reduce the revenue requirement, Vectren South's financial performance could be greatly affected by a drop off in wholesale sales. As described by Petitioner's witness Jerome A. Benkert, such uncertain and volatile financial performance would be especially troubling for a rather small investor owned electric utility such as Vectren South. On the flip side, if market prices were to spike at a time when Vectren South had available power, it could create margin well in excess of the test year level. The proposed GCRA deals

1 with such variability providing more certainty as well as some retained risk to the
2 company, potential upside to customers, and recognizing that for one of the
3 smallest investor owned electric companies, with the same infrastructure
4 investment challenges and increasing reliability requirements facing much larger
5 companies, significant earnings volatility is not in the interest of any stakeholder.
6 Most important, the tracker recognizes that the test year reflects optimal
7 conditions such as the highest availability of generation with minimal amounts of
8 planned outages and Culley Unit 1 still in service that will not exist going forward.
9 In lieu of trying to pinpoint what level of sales will be a more representative future
10 level, the GCRA allows actual performance to be tracked protecting customers
11 and shareholders from the swings in wholesale margins that will potentially occur
12 over the next several years.
13

14 **Q. Please describe the variables that will have a substantial impact on the**
15 **amount of future non-firm wholesale margins.**

16 A. Vectren South's wholesale sales margins are largely dependent on the
17 availability of its coal fired generation. During the entire test year, Vectren South
18 had 1052MWs of on-system coal generation except for scheduled and forced
19 outages necessary to support system reliability. On January 1, 2007, the Culley
20 Unit 1 retirement will reduce Vectren South's coal generation to 1010MWs.
21 Further, during the test year the number of days of scheduled outage was
22 exceptionally low compared to the pro forma year. Also, during the test year
23 Vectren South achieved system wide availability of 89.8%. This represents the
24 highest unit availability ever achieved by the Vectren South system, reflecting a
25 low level of unscheduled outages.
26

27 Unit availability varies from year to year based on scheduled maintenance and
28 unscheduled outages. Not only will Vectren South have a reduced amount of
29 coal-fired generation due to the loss of Culley Unit 1, but, given recent
30 environmental regulations requiring further reductions of various types of
31 emissions, Warrick Unit 4 (150 MWs) will undergo a significant outage in the
32 2008 – 2009 time frame to allow installation of a scrubber. It is also likely that
33 further pollution controls will be required at Vectren South's Brown units (500

1 total MWs), possibly in this same time frame. Therefore, over the next several
2 years, incremental outages affecting over half of Vectren South's coal generation
3 are foreseeable. Increased maintenance on these and other units, given the
4 recent additions of SCRs and fabric filters and the age of the units, is also
5 foreseeable. Continued implementation of environmental controls (incremental
6 SCR catalyst layers) will further reduce the net capability of the system by 2-3%
7 (20-30 MW).

8
9 **Q. How will future unscheduled outages impact Vectren South's wholesale**
10 **opportunities?**

11 A. Given Vectren South's wholesale sales are so dependent on the small amount of
12 coal fired generation that may be available from time to time when retail load is
13 below 1010 MWs (prior coal capacity of 1052 MWs less Culley Unit 1), the loss of
14 a single coal unit for any length of time, whether scheduled or unscheduled, will
15 have a huge impact on the ability to achieve significant wholesale margins.
16 Larger electric utilities can manage outages over a far greater number of units,
17 and remain a wholesale market seller. Vectren South does not have this luxury.
18 Attached as Petitioner's Exhibit No. RGJ- 2 is an analysis that shows that 98.2%
19 of the test year wholesale sales came from our coal fired generation. With the
20 Culley 1 retirement, one unit has already been permanently lost. While no longer
21 allocating a portion of this generation to municipal customers will offset capacity
22 decreases, projected increases in retail demand and the scheduled unit outages
23 must also be factored into the future level of availability.

24 The bottom line is, because the test year level of sales were tied so closely to a
25 very small amount of available coal fired generation which operated at record
26 levels of equivalent availability, the Company's non-firm wholesale results are
27 extremely sensitive to any reduction in the amount of that available generation.
28 As reflected by the history of performance, Vectren South has done a remarkable
29 job in terms of achieving significant wholesale sales based on a relatively small
30 generating fleet. This can be attributed to a number of factors, such as excellent
31 operational availability of the units, favorable coal prices provided by affiliate coal
32 contracts, and a quality wholesale marketing staff dedicated to optimizing the
33 generation. The result has been that despite large plant investments since 1994,

1 including a \$40 million peaking unit, and increases in many expenses, Vectren
2 South has avoided the need for a rate increase for 12 years. This track record of
3 non-firm wholesale results will be very difficult to maintain with the Culley Unit 1
4 retirement, capacity reductions due to environmental controls, growing system
5 demand, cost pressures as Vectren South responds to environmental and
6 reliability mandates, the likelihood of increased unit outages with the average age
7 of the fleet already over 30 years and the possibility of MISO imposed
8 transmission constraints on the ability to export power.

9 None of this Vectren South specific discussion even addresses the always
10 present risks associated with changes in fuel prices, fuel availability, market
11 volatility and competitive cost pressure due to small unit size. These variables
12 affect all market participants and can drive annual margins up or down, again
13 supporting use of margin tracking.

14
15 **Q. How does the cost of emission allowances impact the level of non-firm**
16 **wholesale margins?**

17 **A.** To understand the impact of emission allowances on wholesale opportunities,
18 one has to go back to 1992 when Vectren South filed its first Environmental
19 Compliance Plan in Cause No. 39347 to address the requirements of the Clean
20 Air Act Amendments of 1990. As a result of that proceeding, Vectren South
21 obtained authority to construct a scrubber at Culley Units 2 and 3. Because it
22 was recognized at that time that the EPA would award Vectren South emission
23 allowances to offset SO₂, the Settlement approved by the Commission contained
24 various provisions related to those allowances, including a tracking mechanism,
25 The Clean Air Act Amendment Adjustment (CAAA), that Vectren South continues
26 to use today. Pursuant to that mechanism, as Vectren South uses allowances to
27 offset emissions that are associated with sales of non-firm wholesale power, it
28 attributes a market value to those allowances and essentially pays retail
29 customers for use of these allowances. During the test year period, Vectren
30 South paid its retail customers \$3.6 million for use of these allowances.
31 Reported non-firm wholesale margins are net of allowance costs. This
32 reimbursement of allowance value through a tracking mechanism has been, and
33 will continue to be, a significant benefit to retail customers.

1 More recently, in Vectren South's Multi-Pollutant case (Cause No. 42861), the
2 Commission approved a Settlement whereby Vectren South will install a
3 scrubber at its Warrick 4 Unit and a fabric filter at its Culley 3 Unit. As part of that
4 Settlement Vectren South agreed as follows:

5 The Parties agree to extend the allowance usage crediting
6 mechanism established in Cause 39347 with respect to all future SO₂,
7 NO_x and mercury allowance usage associated with non-retail energy
8 sales using the imputed monthly market cost of such allowances to
9 establish the appropriate credit provided to customers. This additional
10 allowance crediting will commence the earlier of the in service date of
11 the Culley 3 fabric filter or January 1, 2007.

12 As a result, future wholesale margins will be net of all three allowance expenses.
13

14 **Q. Will the Multi-Pollutant Settlement ("MP Settlement") allowance crediting**
15 **requirements decrease future non-firm wholesale margins?**

16 A. That question cannot be definitively answered given the volatility of allowances
17 prices, but by adding both NO_x and mercury to the allowance usage crediting
18 requirement, it is highly likely that future margins will decline. Prior to the test
19 year, SO₂ allowance prices had remained relatively low and stable, with
20 allowances typically sold in the market at prices in the range of \$200. Over the
21 last 24 months, prices have been far higher, peaking at \$1600. Currently, prices
22 stand at approximately \$650. This demonstrates the recent volatility in the
23 allowance market. Future volatility in the SO₂ market alone will greatly impact
24 year over year wholesale margin performance.

25 The MP Settlement adds NO_x and mercury allowance usage crediting. Mercury
26 allowance costs are unknown at this time and will not have an impact until 2010.
27 At that time, the need to "buy" these allowances from customers could add
28 significant cost. The requirement to "buy" NO_x allowances from customers
29 commences in May, 2007. This will definitely add a new expense to the
30 wholesale business. We currently estimate an incremental \$400,000 of expense
31 in 2007 with a significant expense increase beginning in 2009 when NO_x
32 emission limits must be considered on a full year basis. Like SO₂ allowances,
33 that expense will vary with market prices.

1 When combined with the many other variables set forth above, the allowance
2 crediting obligations – which will provide significant dollars back to customers –
3 add yet another volatile expense that makes it exceedingly difficult to predict
4 achievable margins, especially in any given fiscal year. As a result, as described
5 below, while Vectren South's proposal leaves it at risk for varying wholesale
6 performance, the proposed mechanism reasonably addresses these variables by
7 setting a reasonable level of margins as an offset against base rates, and then
8 sharing risk and reward around that level. As should be evident, it is very
9 possible that Vectren South may have some years that fall below that level, and
10 some that exceed it.

11
12 **Q. In light of this variability of margins and the anticipated declines in unit**
13 **availability compared to the test year, how does Vectren South propose to**
14 **treat non-firm wholesale margins in this case?**

15 **A.** Based on projected results for the 12 month pro forma period ending March 31,
16 2007, Vectren South has proposed a credit against base rates of \$10.5 million
17 (the "Non-Firm Credit"). As described herein, despite the shrinking level of
18 available coal generation, Vectren South will still have opportunities to engage in
19 wholesale sales, but it will be increasingly more difficult to support the level of
20 sales Vectren South has achieved over the last several years. The test year
21 amount represents an all time high for margins in a 12 month period, based on
22 the unprecedented level of unit availability and pre-dates closure of Culley Unit 1.
23 The Non-Firm Credit represents Vectren South's pro forma year estimate of non-
24 firm margins (12 months ended March 31, 2007), without any reduction for the
25 known requirement to pay customers market value for use of NO_x allowances
26 commencing in May 2007. The pro forma period reflects one calendar quarter of
27 the loss of Culley Unit 1 and a more representative level of scheduled unit
28 outages. Use of this amount to reduce Vectren South's revenue requirement
29 strikes a fair balance in terms of the sharing of wholesale performance risk.
30 Associated with use of the Non-Firm Credit to offset the revenue requirement is a
31 proposed tracking mechanism (the GCRA) established to share the actual annual
32 margins between the Company and customers.

1 The tracking mechanism works as follows: for each twelve month period if
2 Vectren South can create non-firm margins in excess of the Non-Firm Credit, it
3 will provide customers with 50% of such margins; if Vectren South falls short of
4 the Non-Firm Credit, Vectren South will absorb 50% of the shortfall. Thus, in the
5 unlikely event Vectren South made no sales, customers still receive a revenue
6 requirement reduction of approximately \$5.25 million or 50% of the \$10.5 million
7 base rate revenue credit. If Vectren South duplicates its phenomenal test year
8 performance of \$16.0 million, our customers will receive a revenue requirement
9 reduction of approximately \$13.25 million.

10
11 The tracking mechanism recognizes that over the planning horizon Vectren
12 South may lack the generation resources to sustain its wholesale sales. Rather
13 than debating what the future may hold with respect to market conditions,
14 production costs, transmission constraints, outage schedules, maintenance
15 problems and demand growth, the tracker approach fairly benefits customers and
16 the Company. The amount embedded in rates reflects a reasonable estimate of
17 the ability to continue to make non-firm sales in the short term. Additionally, as
18 described earlier, over the remainder of 2007 and early 2008, 100% of existing
19 municipal contract margins will be flowed back to customers in addition to the
20 Non-Firm Credit embedded in base rates. The fundamental basis for use of a
21 tracker—uncertainty, substantial impact on earnings and inability to control the
22 outcome in a given year, all are present. While any utility can point to uncertain
23 results in an area like this where market conditions vary, here among other
24 factors it is Vectren South's fairly unique small size compared to other market
25 participants that also strongly dictates use of this approach. The fact that
26 Vectren South has generated approximately \$16 million of wholesale margin in
27 the test year with just over 1000MWs of coal generation is remarkable.
28 Sustaining that performance in the face of changing circumstances would be
29 even more remarkable. Rather than putting the Company at great risk to achieve
30 such an incredible performance every year, the high risk of generation
31 availability, fuel cost, allowance cost and market price must be acknowledged.
32 The tracker does just that. The embedded base rate level of sales of \$10.9
33 million is very reasonable given it is the likely pro forma period amount, and

1 reflects no margin deduction for known future expenses related to NO_x and
2 mercury allowance costs. Simply projecting a full year of NO_x allowance costs
3 which begin to be incurred in 2007 alone would drive this pro forma amount down
4 to approximately \$10 million.
5

6 **Q. Have you attempted to estimate non-firm wholesale margins beyond the**
7 **pro-forma period?**

8 A. Yes. Because there are so many variables associated with both having energy
9 to sell at wholesale as well as the value of that energy, we could model many
10 combinations of these variables to guess what the future might hold. We have
11 looked at some scenarios to see how the pro forma period may compare to
12 future years. This has been done for a four year period, although we have not
13 reflected any costs for mercury allowances in 2010. Therefore, in these years
14 and beyond, margins could be far lower. Attached as Petitioner's Exhibit No.
15 RGJ-3 are three such scenarios. All three share the following assumptions – (1)
16 Vectren South's actual unit outage schedule, (2) retail demand growth consistent
17 with our IRP, (3) a 5% forced outage factor, (4) slightly increased fuel costs, and
18 (5) allowance prices for SO₂ and NO_x based on current market prices. Variations
19 in transmission export capability, actual outage experience, actual fuel costs and
20 actual allowance prices will undoubtedly occur. All three scenarios also assume
21 Jasper and Huntingburg contract with Vectren South in 2007, and then all
22 municipals obtain service elsewhere as their contracts expire. As stated before,
23 all remaining municipal margins under contracts in existence at the time of the
24 final order in this case will go to retail customers. The three scenarios share
25 these common assumptions and only show the impact of differing market prices
26 on future margins. As shown in Scenario A, if market prices decline consistent
27 with a reduction in gas prices as forecast in our recent IRP, then over the next
28 five years Vectren Energy will not achieve the Non-Firm Credit amount of margin
29 except in 2008. If market prices stay at current levels (Scenario C), Vectren
30 Energy will be able to achieve margins somewhat above the Non-Firm Credit but
31 below the test year amount. Scenario B shows that if market prices increase 3%
32 every year, all else being equal, Vectren Energy will be able to grow margins
33 significantly, and will provide half the upside to customers.

1
2 These scenarios simply show that just one variable can swing wholesale results
3 by \$10 million or more in any year. If other variables change as well, the yearly
4 swings in results could be even higher. In looking at these price scenarios it is
5 interesting to note that our wholesale sales this summer have dropped, as have
6 MISO market prices compared to the summer of 2005.
7

8 **Q. Are there additional future risks to Vectren South associated with engaging**
9 **in wholesale transactions?**

10 A. Yes. Prospectively, Vectren South's relatively small units lack economies of
11 scale that are available to other MISO market participants. In the event fuel
12 prices, O&M cost and environmental control costs cause the Vectren system
13 units to become less cost competitive in the MISO market, margin from
14 wholesale transactions will decline. This potential cost disadvantage is hard to
15 define because many other utilities are engaged in similar pollution control
16 projects. However, since other larger utilities may achieve system wide
17 compliance by installing controls on selected larger units, it is intuitive that they
18 will enjoy such economies of scale.
19

20 **Q. Is Vectren South's proposal consistent with sound ratemaking principles?**

21 A. Yes. The cost to serve retail customers will be determined through the traditional
22 rate case process. In the past, when a highly variable cost has been identified
23 that is inherently difficult to estimate, that cost has been eliminated from base
24 rates and made the subject of a separate tracker, thus providing the utility a
25 better opportunity to achieve the financial results authorized in the base rate
26 case.
27

28 In this case, Vectren South would be hard pressed to accurately project a base
29 cost of fuel to be recovered via its base rates and rely upon that projection in the
30 long term without a tracker. Everyone agrees that market prices for gas, coal, oil,
31 and purchased power are too unpredictable and subject to significant price
32 swings to rely on such a projection and tie the utility's performance to the
33 accuracy thereof. Yet, these same unpredictable fuel costs and energy market

1 prices will directly impact future wholesale sales results. For Vectren South,
2 perhaps more than other larger investor owned regulated electric utilities, such
3 sales are particularly speculative given its small generating capability and small
4 unit size. In addition to all the risks previously mentioned, a small change in
5 MISO modeling, or a new power plant coming on line, can alter transmission
6 facility capabilities leading to constraints that could severely impair the ability to
7 export power. In the last few years, to protect retail service, Vectren South has
8 scrambled to work with its neighbors on grid improvements to facilitate the ability
9 to import power due to MISO calculations of reduced transmission facility
10 capability. Such constraints, if unresolved for even a limited time period, could
11 greatly reduce wholesale opportunities. Thus, potential wholesale sales margins,
12 to be used to offset recovery of reasonable costs, are very unpredictable.

13 Going forward, under Vectren South's proposal, retail customers will receive a
14 large portion of the benefits of wholesale sales. Much like the release of excess
15 pipeline capacity by a gas distribution company to reduce its gas costs, the
16 results from sales of available generation will be passed on to customers.
17 However, to determine the retail provider's cost to serve, and then place a large
18 portion of cost recovery at risk by requiring the retail utility to hit a test year
19 amount of wholesale sales results, places stress on the ability to fund large
20 system improvements. In providing reliable retail electric service, Vectren South
21 is far better served by stable year to year financial results verses results that
22 swing from year to year based on the current state of the wholesale market. If a
23 simple fixed amount is embedded as a credit against revenue requirement,
24 Vectren South might beat that amount in one year, and then miss that level of
25 margin significantly the next year, causing a year to year swing of many millions
26 of dollars. Such unpredictable fluctuations do not serve customers or the
27 Company. In the long run, both fare better when the utility has a more consistent
28 financial performance, providing the financial stability needed for major capital
29 improvement and maintenance projects.

30
31 **Q. Does Vectren South's proposal properly balance the interests of the**
32 **company and its retail customers?**

33 **A.** Yes. At the outset, I explained how dramatically the electric industry has

changed over time, and that some of these changes are ongoing in nature. Vectren South has essentially lost its firm municipal customers since its last rate case. Wholesale sales remain an "opportunity" linked to, but distinct from, the core objective of providing reliable service to retail customers. This opportunity has grown over time, but now more than ever, is subject to great uncertainty. Under Vectren South's proposal, retail customers benefit from most of this opportunity, whatever the level achieved. Vectren South retains an incentive that will serve to support its efforts to retain expertise in the wholesale area, take on appropriate risks and make every effort to continue the excellent track record of unit availability. As it proceeds in this manner, Vectren South retains appropriate risk if it cannot achieve the Non-Firm Credit, but will not be overly penalized if conditions change or it simply lacks available generation to sell, and its more steady financial performance will be viewed favorably by credit rating agencies and investors.

TURBINE MAINTENANCE

Q. Please describe Vectren South's turbine fleet.

A. Vectren South has five coal fired generating units and six gas fired peaking units. The average age of our baseload and peaking units are 32 and 27 years respectively. They are as follows:

<u>Unit Name</u>	<u>Type</u>	<u>Nameplate Output</u>	<u>In-Service</u>
Culley 3	Baseload	270 MW	June, 1973
Brown 1	Baseload	250 MW	March, 1979
Brown 2	Baseload	250 MW	Feb, 1986
Warrick 4	Baseload	150 MW	Dec, 1970
Culley 2	Baseload	90 MW	Dec, 1966
Brown 3 GT	Peaking	80 MW	June, 1991
Brown 4 GT	Peaking	65 MW	June, 2002
BAGS 2 GT	Peaking	65 MW	May, 1981
BAGS 1 GT	Peaking	50 MW	Sept, 1971
NE 2 GT	Peaking	10 MW	June, 1963
NE 1 GT	Peaking	10 MW	June, 1964

1
2 **Q. Are you familiar with the cost and activities associated with the inspection**
3 **maintenance and overhaul of turbines and generators for these units?**

4 A Yes, I am.
5

6 **Q. What types of gas turbine maintenance occur?**

7 A. General maintenance occurs on an ongoing basis. Combustion inspection and
8 maintenance is more intrusive and typically occurs approximately every five to six
9 years. Complete gas turbine and generator overhaul is periodically required and,
10 depending on the use of the unit, typically occurs approximately every 10 to 12
11 years. Thus, in every year maintenance occurs on each turbine, with periodic
12 larger maintenance activities that require an outage to perform.
13

14 **Q. What types of turbine maintenance occur for coal fired steam turbines?**

15 A. Like gas turbines, general maintenance occurs on an ongoing basis. Turbine
16 valve inspection and repair requires partial disassembly and depending on the
17 use of the unit typically can be expected to occur approximately every three to
18 four years. Periodically, a major outage to allow a complete overhaul of the
19 steam turbine and generator will be required. Depending on the unit's use, this
20 can typically be expected to occur approximately every seven years. The
21 significant maintenance activities may be conducted somewhat sooner or
22 somewhat later if doing so allows us to combine necessary outage activities and
23 thereby reduce system reliability risk.
24

25 **Q. What is a representative level of ongoing operation and maintenance**
26 **expense for all types of its maintenance activities required for gas and coal**
27 **fired turbine and generator?**

28 A. The turbine and generator maintenance expense which will occur during 2006
29 provides a very reasonable representation of the ongoing expense. As depicted
30 on page one of Petitioner's Exhibit No. RGJ-4, the 2006 total O&M gas and
31 steam turbine and generator expense is approximately \$4.7 million compared to
32 a test year level of approximately \$1.4 million. This total cost includes both the
33 general, ongoing day to day operation and maintenance expense of \$1.4 million

1 and outage maintenance expense of \$3.35 million associated with turbine
2 overhaul.

3
4 **Q. Why are the costs in 2006 for the turbine overhaul maintenance activities**
5 **representative of future costs?**

6 A. The mixture and the type of scheduled outage inspection and maintenance that
7 will occur at gas and steam units will vary from year to year but typically the
8 mixture of activities will include at least one major outage for overhaul
9 maintenance. As indicated on Petitioner's Exhibit No. RGJ-4 (page 2), the coal
10 fired and gas turbine/generator overhaul expense expected to be incurred, on
11 average over the next 10 years, is approximately \$3.6 million annually. This
12 does not include the ongoing general operation and maintenance of
13 approximately \$1.4 million I described earlier. This recurring overhaul expense in
14 some years will largely be attributable to coal units, and in other years will be
15 attributable to gas units, and in other years will be a combination of both. The
16 point to recognize is that through the combination of overhauls for gas and coal
17 turbines and generators, the annual average outage related expense to perform
18 overhauls for Vectren South will be approximately \$3.6 million, far above the test
19 year amount of \$220,000. For 2006, we have estimated the overhaul expense
20 will be \$3.35 million, approximately 10% less than the expected 10 year average
21 overhaul expense of \$3.6 million. Moreover, if we used the pro forma period
22 ended March 31, 2007, the cost related to turbine-generator maintenance, and
23 overhauls, would lead to an amount \$468,680 higher than in the amount for
24 calendar year 2006. Thus, 2006 provides a reasonable amount for this
25 maintenance.

26
27 **Q. Why is the test year level of operation and maintenance expense for turbine**
28 **and generator inspection and maintenance not representative of normal**
29 **operations?**

30 A. As shown in Petitioner's Exhibit No. RGJ-4 (page 2), major outage inspection
31 and maintenance activity can be expected to occur each year at either a coal unit
32 or a gas unit. However, none occurred during the test year because Vectren
33 South accelerated two major coal fired steam unit turbine generator inspections

1 and performed than in 2004 at AB Brown Units One and Two. The AB Brown
2 Units were both overhauled in 2004 to take optimal advantage of the planned
3 outages to install SCRs on the units to insure compliance with the NOx SIP call
4 rules by the summer of 2005. In this manner by moving the overhauls into 2004
5 costs were reduced and service reliability improved by minimizing the number of
6 days of unit outages. Thus, while all units will continue to be periodically
7 overhauled, usually with a major gas or steam turbine or generator inspection
8 each year, as other projects occur requiring overhauls we will certainly look for
9 opportunities to combine overhauls and maintenance with other outages.

10
11 It is extremely important that Vectren South have the necessary funds to conduct
12 turbine and generator inspections and maintenance. Without such inspections
13 and maintenance, the Units can suffer unscheduled outages, the repairs can
14 become more extensive, costly, and time consuming than would have occurred
15 under normal maintenance and the output of those generators will probably need
16 to be replaced with purchased power at a higher overall cost to the customer.
17 Failure to maintain this equipment during non-peak demand seasons increases
18 the risk of forced outages during peak summer demand which would create
19 system reliability risk and increased customer costs.

20
21 **Q. Is the requested adjustment of \$3,359,950 necessary and reasonable?**

22 **A.** Yes. It is necessary and reasonable for many reasons. As I mentioned it is
23 needed to ensure reliable service. It maintains the usefulness of our generating
24 assets and, it is a conservative amount. The requested adjustment reflects
25 current prices for this type of maintenance. The cost of turbine and generator
26 inspection and maintenance has only gone up over time and will continue to
27 increase during the life of Vectren South's requested rates.

28
29 **BOILER MAINTENANCE EXPENSE**

30
31 **Q. Please describe boiler maintenance activities.**

32 **A.** Boiler maintenance is generally performed on an annual basis at the same time
33 the steam turbine inspection and maintenance occur. These scheduled outages

1 normally occur during the period of February to early May. During the annual
2 scheduled outage, the boiler tubes and related equipment is inspected and
3 repaired as necessary. This annual opportunity to access the inside of the boilers
4 is essential to ensure the units are fully available during the summer peak
5 demand periods with minimal forced outages. In an effort to minimize unit
6 outage time and system reliability risk the work schedule for the outages is
7 generally around the clock until completed. This intense application of contract
8 maintenance services time and the need to continue to meet system demands
9 requires careful coordination of planned outages and availability of boiler
10 engineers and materials.
11

12 **Q. Are Vectren South's boiler maintenance activities effective?**

13 A. Yes. Our boiler maintenance program has been very successful. The Company
14 has achieved a very high unit availability rate. The 2005 system average forced
15 outage rate due to boiler repairs is 2.05% compared to the NERC GADS
16 (Generation Availability Data System) five year average for similar sized units
17 which was 2.48%. Our 2005 system equivalent availability was 89.16%
18 compared to the NERC GADS five year average of 85.49%.
19

20 **Q. Is the test year reflective of normal boiler system outage maintenance**
21 **expense?**

22 A. No. There were no boiler outages performed on AB Brown Unit 1 & 2 during the
23 test year. Their boiler maintenance was completed during February and March
24 of 2005. Similarly, the Culley Unit 2 outage occurred in April 2006, just outside
25 the test year. Only Culley Unit 3 had boiler system outage activities performed
26 on it during the test year. The test period also lacks any expense for periodic
27 acid cleaning which is performed on a six year cycle. Due to these timing issues,
28 the test year does not reflect a reasonable boiler maintenance expense level.
29 However, as shown, these activities do occur on a regular basis.
30

31 **Q. What pro forma adjustment must be made to result in a reasonable**
32 **ongoing level for boiler outage maintenance?**

33 A. As Petitioner's Exhibit No. RGJ-5 shows, adjusting the test year for missing boiler

1 system outage activities requires a pro forma adjustment of \$1,078,855. This
2 adjustment is shown on Petitioner's Exhibit No. MSH-2, Adjustment A32.

3
4 **NEW POSITION OF BOILER MAINTENANCE ENGINEER**

5
6 **Q. Does Vectren South propose a new position for a boiler maintenance**
7 **engineer?**

8 A. Yes. The proposed boiler engineer expert supports Vectren South's ongoing
9 boiler inspection and maintenance efforts. This person will focus on the reliability
10 of the boilers. They not only will be involved in supervising the boiler
11 maintenance activities but also will supervise maintenance administration and
12 record keeping. Record keeping requires development of a database which
13 tracks the history and condition of every single tube in each of the boilers.

14
15 **Q. How essential is this new employee?**

16 A. This type of inspection, record keeping, planning and maintenance effort require
17 significant time and special attention to detail. The additional position is very
18 essential. As I noted previously, Vectren South's generating fleet has an
19 average age of 32 years. It is important that our generating fleet be properly
20 inspected and maintained. Failure to diagnose needed repairs and replacements
21 during the inspection process or failure to properly make those repairs and
22 replacements can extend outage times and adversely impact reliability and cost
23 to customers. We need the additional help to properly schedule and conduct
24 boiler outages, inspections, and maintenance. Making accurate and timely plans
25 to replace major components of the boiler system is critical to the long term
26 reliability of this equipment.

27
28 **Q. What is the annual expense for this employee?**

29 A. The additional annual expense is \$159,300 included in Petitioner's Exhibit No.
30 MSH-2, Adjustment A21.

31
32 **NEW POSITION OF ELECTRICAL ENGINEER**

33

1 **Q. Why does Vectren South propose a position for a new electrical engineer?**

2 A. Additional engineering support is required to assist with our generation planning.
3 We need more internal assistance in analysis of evaluating alternatives, and
4 determining the most appropriate approaches for capacity planning. The need
5 for having an electrical engineer on staff in the Power Supply Support Service
6 Department has increased since the FERC Code of Conduct Rule has been
7 implemented. In years prior to this new regulation, transmission system
8 operation personnel were allowed to support the generation capacity planning
9 effort. The sharing of resources is now prohibited to avoid adverse market
10 impacts. Since Vectren is actively pursuing the appropriate solution to the next
11 component of capacity addition, the department must have these special skills to
12 complete the analysis. Vectren South needs the additional manpower to help
13 timely analyze and determine the most cost effective capacity solutions.
14

15 **Q. Are there other critical positions that are to be filled?**

16 A. Yes. As of the test year end, there were four positions within the Power Supply
17 area that were vacant. These positions will be filled. They are: 1) Production
18 Lead, 2) Repair Mechanic, 3) Equipment Operator, and 4) Reliability Engineer.
19

20 **Q. What adjustment is required for the new position of electrical engineer and
21 the four vacant positions?**

22 A. The annual cost of these positions is \$454,834 as included in Petitioner's Exhibit
23 No. MSH-2, Adjustment A21.
24

25 **BROWN STATION FLUE GAS DESULFURIZATION (FGD) STRUCTURAL**
26 **MAINTENANCE**
27

28 **Q. What is the age and type of the FGD units at AB Brown One and Two?**

29 A. FGD Unit 1 is 27 years old and Unit 2 is 20 years old. Both units are dual alkali
30 scrubbers. When installed, these were commercially available, cost effective
31 technology. However, many years later, only one other scrubber using this
32 technology continues to operate in the United States on a utility application.
33 Other technologies have replaced this vintage due to some of the operating

1 issues associated with dual alkali scrubbers. One issue is the corrosive effect
2 that vapors from the process have on steel in the vicinity of the scrubber.
3 Vectren is considering its options regarding long term alternatives to these
4 scrubbers. The existing scrubbers do not provide as great an efficiency in terms
5 of removing SO₂ on newer scrubbers, and then by 2010, we will need to either
6 buy allowances to meet CAIR requirements, upgrade the existing scrubbers or
7 replace the scrubbers. These alternatives are currently under review. For now,
8 engaging in increased maintenance activity is necessary to continue to safely
9 operate the scrubbers and in turn the Brown Units. This necessary maintenance
10 will delay the need and the large capital expense of replacing the scrubbers
11 altogether. Planning and constructing emissions equipment to replace the
12 scrubber would require several years. Should the Company decide to modify or
13 replace these scrubbers in the future, the timing and cost of such a proposal will
14 be reviewed. Until such time, for safety reasons and to preserve the operation of
15 the units, this corrosion situation must be addressed.

16
17 **Q. What is the condition of those units currently?**

18 A. The units continue to function as designed. However, due to the advanced age
19 of the equipment and exposure to the desulphurization process, the steel
20 structure supporting the unit, walkways and associated piping are corroding.
21 Because of the corrosive nature of the acidic liquid in the scrubbing process and
22 the highly basic nature of the reagents used to remove the sulfur dioxide,
23 protective coatings and paint in the vicinity of the scrubbers have a limited life
24 span. Even though we have made reasonable efforts to protect this equipment,
25 the advancing age of the equipment and the corrosive, alkaline environment in
26 their immediate proximity now require a significantly higher ongoing level of
27 maintenance expense. The annual expense for maintenance will have to
28 increase as corrosion begins to require increased repairs to the steel structure
29 supporting the unit and associated piping.

30
31 **Q. Please describe the corrosion problem.**

32 A. The corrosion has not yet compromised the integrity of the structures but is
33 serious and must be addressed aggressively. Petitioner's Exhibit No. RGJ-6

contains photographs of the corrosion on various structured steel and concrete components. Without increased maintenance of the steel structure our employees' safety at Units One and Two could become jeopardized. Eventually, as the corrosion advances, the structural integrity of the flue gas desulphurization equipment will become jeopardized. Without aggressive, continuing increase in the maintenance expenditures on the units the structural integrity of the FGD could become compromised and adversely impact unit availability.

Q. How does Vectren South propose to address the corrosion problem?

A. Exhibit No. RJG-7 shows both the operation and maintenance expense associated with the repair and replacement of the FGD Units One and Two steel structure, steel employee walkways and other required component repairs. As shown on Petitioner's Exhibit No. RGJ-7, the annual operation and maintenance expense portion of this effort is approximately \$1,075,000. The adjustment for this is shown as Petitioner's Exhibit No. MSH-2, Adjustment A30. Petitioner's Exhibit No. RGJ-7 lists only the most pressing needs in terms of remediation of facilities. This list typifies the type of work which will be done on an ongoing basis to insure longer term operational integrity.

ENVIRONMENTAL CHEMICAL EXPENSE RECOVERY

Q. Please describe Vectren South's air emission reduction systems.

A. Vectren South has Selective Catalytic Reduction "SCR" units installed on AB Brown Units 1&2, FB Culley Unit 3 and Warrick Unit 4. This equipment removes NO_x emissions. Multipollutant equipment being installed to meet air emission requirements under CAIR and CAMR includes the FB Culley Unit 3 Fabric Filter which will be on line by December 2006, and the Warrick Unit 4 Scrubber which is a joint project with ALCOA scheduled to be completed by 2009. SO₂ scrubbers are in service at AB Brown Units 1&2 and FB Culley Units 2&3.

Q. How are chemical costs associated with the environmental control system currently being recovered?

A. As the new SCR units have been installed, the ammonia and catalyst costs

1 associated with their operation have been tracked through the QPCP-OE
2 Adjustment (Cause No. 42248). Once the multipollutant equipment (Culley 3
3 fabric filter and Warrick 4 Scrubber) is in operation the chemicals associated with
4 their operation would be eligible to be tracked through the Adjustment approved
5 in Cause No. 42861. To date, the chemicals required for environmental control of
6 SO₂ removal using the scrubbers at Brown and Culley have been recovered
7 through base rates.

8
9 **Q. Does the consumption of these chemicals support the use of Indiana coal?**

10 A. Yes. Because of the inherently high levels of sulfur, nitrogen and ash,
11 byproducts from the combustion of Indiana coal, it can only be utilized for electric
12 production if the units have high efficiency environmental controls (scrubber,
13 SCR, and particulate removal equipment). The various chemicals procured by
14 Vectren South function as follows:

15
16 (1) lime, soda ash, and sodium are used for the removal of SO₂ at the A. B.
17 Brown Unit 1 & 2 utilizing a dual alkali scrubbing process; (2) limestone is used at
18 Culley Unit 2 & 3 to remove SO₂ via a forced oxidation wet limestone scrubber,
19 and will also be required for operation of the Warrick 4 scrubber; and (3) catalyst
20 is used in the SCRs to remove nitrogen oxide (NO_x) when combined with the
21 injection of ammonia.

22
23 **Q. Has Vectren South's use of chemicals increased over time?**

24 A. Yes. The need for these chemicals has been influenced by the increasingly
25 stringent environmental emission restrictions. The primary new regulations
26 which have impacted these costs are the Clean Air Interstate Rule (CAIR) and
27 Clean Air Mercury Rule (CAMR). There is also pressure in future years for more
28 regulations to be put in place which require higher removal percentages, which
29 will result in increased operations of the existing control equipment. There is
30 already a known requirement to increase the operating hours for the SCRs under
31 CAIR. Additionally, market demand for these products has increased as efforts
32 at air quality compliance have increased.

33

1 **Q. Is catalyst an environmental chemical?**

2 A. Yes. The SCR catalyst is consumed and contaminated over a period of time as
3 part of the process of removing NO_x at Brown Units 1 & 2 and Culley Unit 3 and
4 Warrick Unit 4. The ammonia is completely consumed and the catalyst is
5 consumed and contaminated in direct relationship to the output of the unit and
6 time.
7

8 **Q. What influences the cost of the SCR catalyst?**

9 A. At the present time a majority of the catalyst is not manufactured in the United
10 States. Therefore the cost is impacted by the currency exchange rate variability.
11 Second, it is a commodity based product using very expensive components
12 (Vadium), and shipping cost is high and impacted by the petroleum markets.
13

14 **Q. What catalyst replacements have occurred or are scheduled to occur within
15 the pro forma period of this case?**

16 A. The catalyst are periodically inspected during planned and opportunity unit
17 outages. Samples of the catalyst are taken to establish its expected
18 performance. Periodically catalyst layers must be replaced and/or cleaned.
19 Based on this analysis, an additional catalyst layer will be installed in Culley Unit
20 3 during the fall 2006 scheduled outage and in Warrick Unit 4 in January 2007.
21 Regeneration at the Warrick Unit occurred in January 2006. As a result, the year
22 to year cost for catalyst will vary depending on its consumption at the units.
23

24 **Q. What has been the cost trend associated with these chemicals?**

25 A. Recently, these costs have increased dramatically. In 2003, all chemicals cost
26 \$6 million. The test year cost is \$10.5 million, and the pro forma amount in this
27 case is an increase of \$2,308,679 for environmental chemicals (Petitioner's
28 Exhibit MSH-2 Adjustment A24) and an increase of \$2,540,000 for catalyst costs
29 (Petitioner's Exhibit MSH-2 Adjustment A25). These costs have risen due in part
30 to the recent price volatility in the natural gas and petroleum markets. Shipping
31 costs have increased due to rail and trucking fuel surcharges. As the
32 Commission is aware, the cost of natural gas reached \$15/dekatherm during the
33 test year.

1
2 **Q. How does Vectren South propose to recover these environmental chemical**
3 **costs?**

4 A. The pro forma period level of these costs will be recovered through base rates.
5 Given the rise in gas and oil prices, as well as the increase in operation of our
6 control equipment this amount is much higher than the past. Via the proposed
7 Generation Cost and Revenue Adjustment, we will track changes from the base
8 level costs. Apart from price volatility, year to year changes in usage levels such
9 as the replacement of catalyst, also drives fluctuations. The GCRA would
10 replace ongoing recovery of certain chemical costs through the current tracker
11 filings in the NO_x and Multipollutant rider proceedings. Apart from administrative
12 convenience, the new chemical tracker will treat recovery of all chemical costs for
13 our SCRs and Scrubbers the same. Given the common objective of achieving
14 environmental compliance at our coal units through operations of our control
15 equipment, this common treatment makes sense. The current list of chemicals to
16 be recovered in the GCRA includes ammonia, SCR catalyst, lime, limestone,
17 soda ash, sodium, and other chemicals that future regulations may require to
18 remain fully compliant with mercury or carbon dioxide removal technologies.
19

20 **Q. Is this suggested approach to cost recovery appropriate?**

21 A. Yes. As previously stated, the test year product cost was heavily impacted by
22 the large increase in natural gas cost. Chemical costs have generally continued
23 to rise since the test year. Tracking these costs accounts for the volatility, which
24 given the tie to fuel prices is likely to continue, and due to the high test year
25 expense level which would potentially be adjusted even higher to reflect current
26 prices, may provide our customers the opportunity to benefit from the lower costs
27 of the current natural gas market. This approach allows an accurate dollar for
28 dollar matching of volatile chemical expense with customer receipts and avoids
29 the need to estimate what the volatile fluctuating level of chemical expense may
30 be in the future. The result is chemical expense is not over recovered in one
31 year or under recovered in the next year but rather is accurately recovered
32 sending accurate price signals to customers. The proposal symmetrically
33 balances the interests of the Company and its customers.

1
2 **Q. How is Vectren South going to control the cost of these purchases?**

3 A. Vectren employs a strategic sourcing strategy on the purchase of all material with
4 the objective of minimizing costs. These commodities are purchased at the
5 lowest cost reasonably possible. The documentation for these tracked expenses
6 would be available for review if desired.
7

8 **Q. How would the environmental chemical portion of the GCRA function?**

9 A. As Petitioner's witness Jerrold L. Ulrey describes in detail in his direct testimony
10 Petitioner's Exhibit No. JLU-1, the actual environmental chemical costs would be
11 compared to the level of these costs included in base rates, with the difference
12 being tracked in the GCRA. On a quarterly basis, the cost recovered would be
13 reconciled with the cost incurred. The result is an accurate dollar for dollar
14 matching of expense incurred with expense recovery.
15

16 **Q. Are there any usable by-products from these environmental control
17 processes?**

18 A. Yes. The scrubber at the F B Culley plant produces as a waste product, gypsum,
19 which is sold under a long term contract. Also Sodium bisulphite is a by-
20 product from our AB Brown Unit 1 dual alkali scrubber when operated in a
21 production mode.
22

23 **Q. Has Vectren South been able to sell the Sodium bisulphite?**

24 A. Yes. These sales were to neighboring utilities to enhance their environmental
25 compliance on various stack emissions. As a major sales contract has expired,
26 sales have declined by \$984,850. The adjustment for this decline in sales is
27 reflected on Petitioner's Exhibit No.MSH-2, Adjustment A27. This decline in
28 sales is the result of the customer finding alternate sources and alternate
29 chemicals which reduced their cost. Therefore, AB Brown was unable to
30 compete with the market price of the competitors.
31

32 **Q. How will by-product sales be treated in the GCRA?**

33 A. The ongoing revenue from the sale of all by-products will be used as an offset to

the cost of these environmental chemicals in the GCRA.

PURCHASED POWER

Q. Does Vectren South rely on purchased power contracts as part of its supply portfolio to meet the demands of its retail customers?

A. Yes. To meet the demands for retail customers and preserve adequate reserve margins, Vectren South has historically, and today continues to, rely in part on purchased power contracts. We currently have a contract for up to 73 MW available June through September that has been in place for the last 3 years with DTE. This contract will expire in 2006. Further, Vectren South purchases 32 MWs from Ohio Valley Electric Corporation ("OVEC") at a current cost of approximately \$31 per MWh.

Q. Has Vectren South replaced the expiring DTE contract?

A. Yes. We have entered into a contract with Duke Energy Vermillion (Duke) to purchase 100 MW of capacity to be available year round for the period January 1, 2007 through December 31, 2009 from the Vermillion facility. This allows us to meet reserve margin requirements to ensure system security. Vectren South will provide the fuel to Duke and recover the cost through the fuel adjustment clause. The demand charge is somewhat higher than the expiring DTE contract we entered into in 2003, but significantly below the cost to own and operate a peaking facility. A yardstick for cost comparison is Vectren South's recently added combustion turbine at the A. B. Brown facility. That facility cost \$34 million for 80 MW of capacity. At a fixed charge rate of 15% and adjusted to 100 MW, the fixed costs would be over \$5.30 per kW per month, which exceeds the cost of the Duke contract. In addition, MISO has certified a delivery path and final contractual arrangements are now underway so power deliveries can commence on January 1, 2007.

Q. Please describe Vectren South's relationship with OVEC and its ongoing purchases.

A. OVEC and the Indiana-Kentucky Electric Corporation (IKEC) were organized on

October 1, 1952 by investor owned utilities to furnish electric service for the uranium enrichment complex being built by the then-atomic Energy Commission, currently known as the Department of Energy (DOE). For many years, OVEC sold most of its output to the DOE. In 2000, DOE gave OVEC notice of cancellation of the DOE power agreement effective April 30, 2003. As a 1.5% shareholder in OVEC, upon cancellation of the DOE agreement, Vectren South obtained the opportunity to receive approximately 32 MW of energy from OVEC at a delivered cost of approximately \$31 per mw. That cost is less expensive than the cost per mw typically available from peaking generators or the wholesale market. Vectren South has allocated its share of OVEC energy to retail customers so that they enjoy the benefits of this low cost power. OVEC is engaged in two environmental projects to install scrubbers on ten of its eleven units at two plant sites. These capital improvements will continue to increase the demand cost of power sold to Vectren South.

Q. How does Vectren South propose to recover demand costs associated with purchase power contracts?

A. As shown on Petitioner's Exhibit No. MSH-2, Adjustment A12, an increase in purchased power demand charges of \$3,715,500 is requested in base rates to cover known near term increases related to the Duke and OVEC contract changes. From that base rate level, increases and decreases in purchased power demand costs would be tracked through the Generation Cost and Revenue Adjustment (GCRA) as described by Vectren South witness Jerold L. Ulrey. The fuel charges/energy component of the purchased power would be recovered through the fuel adjustment clause (FAC).

Q. Is it reasonable and fair that increases and decreases in purchased power demand costs be tracked through the GCRA?

A. Yes. By doing so, purchased power is placed on a level playing field with other supply options. The disincentive to not rely on purchased power as a supply alternative because of increased levels of demand costs is removed.

Full and accurate purchased power cost recovery serves to encourage cost-

1 effective supply decisions in Vectren South's advance planning to meet demand
2 and to hedge against purchased power price volatility and availability. Despite
3 the benefits of the more open and transparent wholesale power market made
4 available through MISO Day 2, price volatility and energy availability continues to
5 be a consideration in cost effective supply decisions. For example, during the
6 summer of 2006, Real Time pricing at Vectren South's load node peaked at
7 approximately \$301. The real time peak during the spring of 2006 occurred in
8 April at approximately \$354. While these peaks are not indicative of average
9 market conditions, they serve to demonstrate the price volatility that can impact
10 power costs if a utility does not have alternative sources like purchased power
11 contracts to meet demand. Moreover, while the MISO market provides a source
12 of energy, it does not provide capacity. Vectren Energy purchases capacity to
13 provide a reserve margin.
14

15 On the most fundamental level of regulation, Vectren South should have a
16 reasonable opportunity to recover prudently incurred purchased power costs
17 associated with meeting the growing demands of its customers. It is the
18 customers' demands that create the need for economic purchased power
19 contracts and it is appropriate that those customers receive accurate price
20 signals for the costs incurred to meet those demands. Accurate dollar for dollar
21 tracking of these costs is the best way to satisfy the basic ratemaking principle
22 that reasonable costs of service should be accurately reflected in the prices
23 charged to customers for that service.
24

25 These purchased power costs are substantial in amount, variable, and potentially
26 volatile as a result of changing marketplace conditions. Such variables are
27 largely outside the control of management. These characteristics further support
28 the reasonableness of the GCRA to track actual purchased power demand costs.
29

30 Dollar for dollar recovery of purchased power costs serves to increase the
31 financial stability of the Company. Customers receive the certainty of paying only
32 the actual demand costs incurred.
33

1 **Q. Will Vectren South continue to assess the economic and reliability benefits**
2 **of purchased power to meet the demands of its retail customers and**
3 **assure adequate reserve margins?**

4 A. Yes. Over time, additional peaking capacity will be needed. Recently Vectren
5 South issued an RFP for up to 200 MW to be available in 2010 and 2011. It is in
6 the best interest of our customers that Vectren South consider the economic
7 benefits and improved reliability that may be available through purchasing
8 peaking capacity available in that time frame. Similarly, with respect to future
9 purchase, Vectren South will publicly issue Requests For Proposals (RFP).
10 Responses to RFPs are closely scrutinized for cost, economic benefit, reliability,
11 transmission access, deliverability, scheduling control, counter party credit
12 worthiness, and other criteria on a case by case basis needed to ensure that the
13 purchase is economic and the energy will be available when needed to meet
14 reliability needs.

15
16 **Q. What is Vectren South's planning reserve margin?**

17 A. Vectren South uses a 15% planning reserve margin. Due to the need to add
18 capacity in blocks, at times Vectren South may exceed the planning reserve
19 margin or in some years rely on the market to provide a small percentage of the
20 energy requirements. For example, it is not typical to purchase an odd number
21 like 28 MWs through a bilateral capacity contract. Rather, blocks of capacity
22 such as 50 MWs or 100 MWs are typically sold.

23
24 **Q. Are purchased power contracts necessary to economically and reliably**
25 **meet the demands of your customers?**

26 A. Yes. Since the time of our last rate case in 1993, our peak load has increased
27 from approximately 1013 MWs (7/28/1993) to over 1300 MWs. Petitioner's
28 Exhibit No. RGJ-8 shows the annual peak demand from prior to the last rate case
29 to the summer of 2006. This summer on August 10, 2006, we set a new peak
30 demand record of 1300 MW. Despite periods of economic downturn and the loss
31 of manufacturing jobs to the world economy, electric demand on the Vectren
32 South system has trended upward since the time of our last rate case. The loss
33 of 42 MWs from the closure of Culley Unit 1 at the end of 2006 provides

1 additional emphasis on the consideration of cost effective purchased power
2 contracts.

3
4 **Q. Will the Commission and other stakeholders have the opportunity to review**
5 **new purchased power contracts?**

6 A. Yes. In conjunction with GCRA recovery of fluctuating demand costs, Vectren
7 South will provide information related to its evaluation of contracts to the
8 Commission. The evaluation process will provide support for the decision to
9 make such purchases.

10
11 **ASH DISPOSAL COSTS**

12
13 **Q. Please describe Vectren South's ash disposal activities.**

14 A. The consumption of coal at the Company's baseload units produces a substantial
15 amount of ash. This includes bottom ash and fly ash. This ash must be
16 disposed in an environmentally acceptable manner. Our Culley Station
17 generates approximately 140,000 tons of ash per year and our Brown Station
18 generates approximately 165,000 tons per year. Culley and Brown both have
19 onsite disposal areas. However, those disposal sites are becoming full and will
20 need to either be cleaned and expanded for future use, or replaced by a new
21 landfill site.

22
23 **Q. What is the estimated cost of cleaning, expanding, and developing new**
24 **disposal facilities for the Culley and Brown units?**

25 A. Over the next 10 years, the capital costs are estimated to be approximately
26 \$29,350,000 and the associated O&M costs are estimated to be \$26,600,000.

27
28 **Q. Has Vectren South designed an alternative plan intended to provide lower**
29 **operating costs and lower capital costs?**

30 A. Yes. We can delay the development of the Culley Unit landfill and extend the life
31 of the Brown Unit's ash pond beyond 2016 by hauling ash from both units to the
32 Cypress Creek Coal Mine owned by Vectren Fuels, Inc. The ash will be used as
33 fill at the mine. This will allow both ash ponds at Culley to be cleaned out by the

1 end of the Cypress Creek Mine operation in early 2009 and thereafter have
2 renewed capacity to accept ash disposal. This delays the development and
3 operating costs of a new land fill for Culley. For Brown, this proposal also delays
4 the construction and operating costs of a new ash pond.
5

6 **Q. What are the anticipated savings from this proposal?**

7 A. The present value savings calculation set forth in Petitioner's Exhibit No. RGJ-9
8 shows that over the next 10 years, the O&M savings is \$4.7 million and the
9 capital cost savings is \$6.5 million.
10

11 **Q. When does the Company propose to implement this plan to reduce**
12 **operating and capital costs for ash disposal?**

13 A. The Company will begin the process of accelerated hauling ash to the Cypress
14 Creek Mine upon approval of this proposal in this case.
15

16 **Q. What increase in annual operating expenses is required to allow this**
17 **program to move forward?**

18 A. The annual increase in operating expense will be \$1,500,000 as shown on
19 Petitioner's Exhibit No. MSH-2, Adjustment A26.
20

21 **AGING WORKFORCE RELATED COSTS**
22

23 **Q. As discussed in Vectren South's Witness William J. Doty's testimony, what**
24 **is the impact of the aging workforce pro forma adjustment on the power**
25 **supply area?**

26 A. The aging workforce pro forma adjustment amount for the Power Supply area is
27 \$1,392,899 as shown in Petitioner's Exhibit MSH-2 Adjustment A22. The
28 positions affected are Electrician Apprentice, Repair Mechanic Apprentice,
29 Auxiliary Equipment Operator Apprentice, and Coal Yard Operator. The
30 background on Vectren South's aging workforce issue is discussed at length in
31 William S. Doty's testimony.
32

33 **Q. Please describe that adjustment in more detail.**

1 A. My attached schedule Petitioner's Exhibit No. RGJ-10 is a summary of the
2 Power Supply – Electric Aging Workforce pro forma adjustment. Petitioner's
3 Exhibit No. RGJ-11 is a table consisting of active employees, planned hires, and
4 the number of eligible retirements in the years 2007 – 2025 by classification for
5 Power Supply in both the four year and three year apprenticeship programs.
6 Power Supply plans to add 13 FTE consisting of 5 Electrician Apprentices, 6
7 Repair Mechanics, an Auxiliary Equipment Operator, and a Coal Yard Operator.
8 These new employees result in additional bargaining unit labor cost of \$844,050,
9 and additional allocated supervision labor of \$44,878. Vectren South will also
10 incur additional training costs of \$493,000. Also included is the cost of an
11 Engineering Cooperative to provide cost effective engineering expertise to
12 Vectren South and also identify prospective engineer employees in the future.
13 The Engineering Cooperative pro forma adjustment is \$10,971.
14

15 **Q. What are the possible consequences if you fail to fill these positions?**

16 A. Since these are front-line positions that directly affect the day to day operation of
17 the power plants it is my judgment, and a reasonable conclusion, that plant
18 performance levels will decline in the next ten years if these positions are not
19 filled at this time. Factors such as plant availability, capacity factors, and output
20 can be affected by the manner in which the plant is operated and maintained.
21 The risk and potential cost to Vectren South's customers if an unscheduled
22 outage occurs or the base load Power Supply plants are not operating at their
23 optimum levels can be extremely high. All of these tasks directly affect the
24 provision of low cost reliable power deliveries.
25

26 **Q. Why is this adjustment reasonable?**

27 A. As mentioned in William J. Doty's testimony, Vectren South has made every
28 effort to keep rates low by managing employee numbers to the lowest
29 reasonable level by using attrition and replacing only those jobs that are required.
30 This strategy has worked well for several years. Now, however, it is time to
31 match future workforce levels to the requirements of the Power Supply system.
32 While these additional employees and training costs result in cost increases,
33 adding the employees now and having them in place as retirements occur is a

1 prudent and reasonable approach to operating the plants. Therefore, it is clear
2 that this is a very reasonable adjustment.

3
4 **FUEL HANDLING COSTS**

5
6 **Q. Please explain the adjustment reflecting increased fuel handling costs.**

7 A. Fuel handling costs consist of unloading, storage, preparation such as crushing,
8 and movement of the coal from the trucks or trains to inventory and then on to
9 the boiler. These costs, while directly related to fuel expense, are not recovered
10 through the fuel adjustment clause. The cost increases Vectren South has
11 incurred are in the areas of labor, materials, and fuel. Diesel dozers and other
12 heavy equipment is used extensively in fuel handling. Accordingly, the cost of
13 diesel fuel and maintenance on the equipment has had an upward impact on fuel
14 handling costs. Labor costs have also increased. The proposed increase in fuel
15 handling costs is \$332,391 as supported by Petitioner's Exhibit MSH-2,
16 Adjustment A11.

17
18 **CULLEY UNIT 1 RETIREMENT**

19
20 **Q. How does the Culley Unit 1 Retirement impact Vectren South's operating**
21 **costs?**

22 A. Vectren South will no longer incur certain non-labor operating costs at that unit of
23 \$357,573. We are faced with the choice of either allowing the 12 employees that
24 operated that unit to leave the Company, or we can retrain those employees to
25 perform work at our other generating units. We have made such a proposal to
26 the Union but have not yet reached agreement on the future of these employees.
27 Given the retirement date of the unit in December, we will know the final outcome
28 on that labor issue before the final hearing in this case.

29
30 **Q. For purposes of the pro forma adjustment, how have you handled this**
31 **labor issue?**

32 A. Given our preference is to redeploy these employees and use them to perform
33 operating and maintenance work elsewhere, the pro forma reflects that outcome.

1 We will revise it later in the case if necessary. Therefore, I have reflected that
2 the redeployment of those employees will save \$437,000 of overtime costs of
3 other power plant employees. Combined with the non-labor cost reduction
4 described above, we have reduced test year expense by \$794,573 as set forth in
5 Petitioner's Exhibit No. MSH-2 Adjustment A28.

6
7 **NOx PROJECT CAPITAL**

8
9 **Q. What is the status of Vectren's NOx Compliance Projects which were the**
10 **subject of IURC Cause No. 42248 and 42340?**

11 A. The installation of Selectric Catalytic Reduction (SCR) units is complete at
12 Warrick Unit 4, Culley Unit 3, Brown Unit 1 and Brown Unit 2. Vectren South
13 invested over \$260 million in these facilities which have operated successfully
14 and allowed us to meet the NOx SIP Call rules.

15
16 **Q. Are the SCRs and related equipment reflected in the rate base?**

17 A. Yes. The depreciated asset value is included in rate base.

18
19 **Q. How is the operation and maintenance cost related to the SCRs being**
20 **handled in this rate case?**

21 A. The cost of operating and maintaining the equipment is included in the test year
22 and pro forma year values. The cost of chemicals (ammonia and catalyst) are
23 also included in the revenue requirement, with future variances to be tracked
24 through the GCRA process. Until the order in this case, Vectren South will
25 continue to recover the operating costs through its NO_x rider. That rider will
26 cease at that time.

27
28 **FABRIC FILTER AT CULLEY UNIT 3**

29
30 **Q. What is the status of the Fabric Filter installation at Culley Unit 3?**

31 A. The Fabric Filter will be installed on Culley Unit 3 during an outage which will
32 start on September 1, 2006 and be complete in early December, 2006. The
33 Fabric Filter will be in service by year end.

1
2 **Q. Has the Commission already approved this project?**

3 A. Yes. As part of Vectren South's Multi-Pollutant case, Cause No. 42861, Vectren
4 South obtained pre-approval of the Project as necessary to comply with new
5 environmental regulations.
6

7 **Q. What is the projected cost of this device?**

8 A. The project cost is expected to be \$49 million before AFUDC and overheads.
9

10 **Q. How is this investment being handled in this rate case?**

11 A. Once completed, the project cost will be included in rate base. I will file an
12 update with the Commission verifying the used and useful nature of the property,
13 and the rate base will be updated accordingly.
14

15 **OHIO RIVER STATION**
16

17 **Q. What is the status of Vectren South's Ohio River Generating Station**
18 **("ORS")?**

19 A. ORS is a retired generating station that Vectren South is preparing to demolish in
20 2007.
21

22 **Q. What will it cost to demolish ORS?**

23 A. MACTEC, an experienced demolition contractor, has provided Vectren South
24 with a cost estimate of \$9,548,647 (net of salvage), including asbestos removal,
25 superstructure dismantlement, building demolition, backfilling and debris
26 disposal.
27

28 **Q. Is it reasonable to assume that Vectren South's generating stations**
29 **currently in operation will be dismantled after their retirement dates?**

30 A. Yes. While dismantlement may not occur simultaneously with retirement, safety
31 and environmental conditions will require dismantlement eventually. In the case
32 of ORS, for example, deterioration of the structure creates increasing risk of
33 asbestos release and other safety issues. Therefore, we have decided to have

1 the plant dismantled to eliminate these risks and the cost of future maintenance
2 for this unused facility. The same issues will exist for our currently operating
3 facilities (which also have asbestos in them) at the end of their useful lives.
4 Another reason supporting dismantlement is the limited number of sites in
5 Indiana that have all of the characteristics necessary for new generating stations.
6 After retirement of our existing plants, it is likely the plants will be dismantled so
7 the sites can be reused for new Vectren South generating facilities.

8
9 **Q. Does this complete your testimony?**

10 **A. Yes.**

Percentage of Wholesale Sales From Coal-Fired Generation

	ABB1	ABB2	FBC1	FBC2	FBC3	W4	ABB3	ABB4	BAGS1	BAGS2	NEG1	DTE	TOTAL
Apr 05	7,264	12,843	1,913	6,327	2,744	19,862	600	1,584	0	483	21	0	53,641
May 05	23,330	28,130	1,780	18,849	2,177	14,694	0	0	0	0	0	0	88,960
Jun 05	13,348	14,632	1,261	7,647	3,427	11,785	904	1,474	836	670	0	0	55,984
Jul 05	17,464	18,300	3,047	8,772	4,965	22,970	915	734	425	0	0	0	77,592
Aug 05	11,087	11,319	2,760	7,824	1,365	17,733	1,354	2,219	906	2,207	0	0	58,774
Sep 05	23,470	27,303	4,572	11,378	10,420	30,228	1,416	2,061	235	854	0	0	111,937
Oct 05	38,416	41,981	5,177	20,505	28,699	23,053	127	232	0	225	0	0	158,415
Nov 05	32,365	40,200	381	14,299	17,893	18,881	531	961	188	269	0	0	125,968
Dec 05	31,346	34,916	1,207	17,896	15,014	22,021	314	345	0	0	0	0	123,059
Jan 06	46,655	50,548	2,750	25,399	23,356	16,112	274	0	0	38	0	0	165,132
Feb 06	43,077	54,591	1,047	21,962	11,612	14,438	0	0	24	0	0	0	146,751
Mar 06	35,659	38,555	3,625	7,965	42,666	18,968	206	550	0	0	0	0	148,194
Total	323,481	373,318	29,520	168,823	164,338	230,745	6,641	10,160	2,614	4,746	21	0	1,314,407
% of Total	24.6%	28.4%	2.2%	12.8%	12.5%	17.6%	0.5%	0.8%	0.2%	0.4%	0.0%	0.0%	100.0%

PROJECTION OF WPM MARGIN WITH VARIOUS ASSUMPTIONS
8/14/06 4:10PM

	TEST YEAR	PROFORMA YEAR	2007	2008	2009	2010
	\$16,040	\$10,500				
PROJECTED NON FIRM MW's			1,031,300	1,310,900	1,292,800	1,242,700

SCENARIO A- MARKET PRICE DECLINE

REVENUE	\$34,638	\$42,815	\$38,143	\$41,250
MARGIN	\$9,968	\$11,984	\$8,682	\$8,320

SCENARIO B- MARKET PRICE INCREASE

REVENUE	\$36,327	\$47,135	\$48,178	\$54,022
MARGIN	\$11,657	\$16,304	\$18,717	\$21,092

SCENARIO C- MARKET PRICE FLAT

REVENUE	\$35,314	\$44,517	\$44,220	\$48,169
MARGIN	\$10,644	\$13,686	\$14,759	\$15,239

GENERAL ASSUMPTIONS	MUNI
45 day outage on Brown 1 in 2011	Contracts expire as follows
44 day outage on Culley 2 in 2008	Jasper 12/31/2007
45 day outage on Warrick 4 in 2009	Huntingbur 12/31/2007
retail demand grows 2% per year on avg hourly demand	Tell City 12/31/2007
5% forced outage factor	Cannelton 12/31/2007
coal generation only	Ferdinand 4/1/2008
outage schedule built in	SCENARIO A assumptions
MISO fees flat	Prices decrease 2% 2006-2007,
Culley 1 impact 236,000 mws loss	GED projection going forward 2008-2%
SO2 & NOx allowance at current market price	2009 - 10.7%, 2010 - 0.7%, 2011 - 0.8%
Warrick 4 scrubber in 2009	SCENARIO B
fuel prices increase 3% per year	Market price increasing 3%/year
	SCENARIO C
	Market price flat from 2006

"Gas Turbine" & "Turbine/Generator" Maintenance Activities

<i>Gas Turbines (Line # 3 below)</i>	\$471,227
<i>Turbines/Generators (Line # 7 below)</i>	\$2,888,723
Total Proforma Amount	\$3,359,950

Comparison of O&M in the Test Year (Apr. '05 thru Mar. '06) vs. 2006

	Test Year Totals	2006 Totals	Variance	Line #
	<i>Actual</i>	<i>ESTIMATE</i>	<i>Test Year vs</i>	
Total O&M - "Gas Turbines" & "Turbines/Generators"	\$1,389,344	\$4,749,294	\$3,359,950	1
				2
Gas Turbines	\$620,069	\$1,091,296	\$471,227	3
MAINT-GENERAL	\$615,608	\$614,052	(\$1,556)	4
MAINT-SCHLD OVERHAUL/OUTAGE	\$4,461	\$477,244	\$472,783	5
				6
Turbines/Generators	\$769,275	\$3,657,998	\$2,888,723	7
MAINT GENERAL	\$554,670	\$784,166	\$229,497	8
MAINT OVERHAUL/OUTAGE	\$214,605	\$2,873,832	\$2,659,227	9

Power Supply Coal-fired & Gas-fired Turbine Overhaul Schedule:

		(\$, Millions)	Frequency	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Gas Turbines													
AB Brown #4 GT Combustion Inspection	5/6 Years			\$0.4									
AB Brown #4 GT T-G Overhaul	10/12 Years											\$3.4	
BAGS #1 GT Combustion Inspection	5/6 Years												
BAGS #1 GT T-G Overhaul	10/12 Years							\$3.2					
BAGS #2 GT Combustion Inspection	5/6 Years	\$0.5									\$0.4		
BAGS #2 GT T-G Overhaul	10/12 Years		\$2.5										
Gas Turbines Total		\$0.5		\$2.9	\$0.0	\$0.0	\$0.0	\$3.2	\$0.0	\$0.0	\$0.4	\$3.4	\$0.0
Turbines/Generators													
FB Culley #2 T-G Overhaul	7 Years				\$3.0								\$3.5
FB Culley #2 Turbine Valve Inspect/Repair	3/4 Years	\$0.2								\$0.4			
FB Culley #3 T-G Overhaul	7 Years	\$2.4									\$3.4		
FB Culley #3 Turbine Valve Inspect/Repair	3/4 Years	\$0.1						\$0.4					
AB Brown #1 T-G Overhaul	7 Years									\$3.3			
AB Brown #1 Turbine Valve Inspect/Repair	3/4 Years				\$0.4								\$0.4
AB Brown #2 T-G Overhaul	7 Years								\$3.3				
AB Brown #2 Turbine Valve Inspect/Repair	3/4 Years		\$0.4									\$0.4	
Warrick #4 T-G Overhaul	7 Years					\$3.0							
Warrick Turbine Valve Inspect/Repair	3/4 Years		\$0.4							\$0.4			
Turbines/Generators Total		\$2.7	\$0.8	\$3.4	\$3.0	\$0.4	\$3.3	\$4.1	\$3.4	\$0.4	\$3.9	\$3.9	
Turbines/Generators and Gas Turbines Total		\$3.2	\$3.7	\$3.4	\$3.0	\$3.6	\$3.3	\$4.1	\$3.8	\$3.8	\$3.9	\$3.9	

Gas Turbines - 10 Year Plan Ave. (2006-2015):	0.98	(Millions)
Turbines/Generators - 10 Year Plan Ave. (2006-2015):	2.63	(Millions)
Turbines/Generators and Gas Turbines - 10 Year Plan Average (2006 - 2015):	3.61	(Millions)

"Boiler System" Outage Activities

The test year period defined as April '05 thru March '06 contained no Boiler System outage related expenses for the A.B. Brown Plant. Brown Unit # 1 & 2 outages occurred in the Feb/Mar '05 & Apr/May '06 timeframe just before and after the test year period. The test year period contained only one Boiler System outage for the F.B. Culley Plant. The Culley Unit # 2 outage occurred in the Apr. '06 timeframe just after the test year period. Combined, the missing outage related expense is \$955,855. The test year period is also missing any expense for periodic acid cleaning that is typically performed on a 6 year cycle. Annualizing the acid cleaning expense for all 4 units totals to an additional \$123,000/year. Combined, these two items add to the total requested Proforma amount of \$1,078,855.

Adjusting test year for missing or abnormal expenses:

Add normal "MAINT. OUTAGE PLANT" outage related expenses that are missing from the selected test year period:

Brown Unit # 1 outage in Apr/May '06 (after test year period) - June YTD \$254,133 - FY Test Year \$72,695	\$181,438
Brown Unit # 2 outage in Apr/May '06 (after test year period) - June YTD \$403,218 - FY Test Year \$65,536	\$337,682
Culley Unit # 2 outage in Apr '06 timeframe (after test year period) - June YTD \$453,442 - FY Test Year \$16,707	\$436,735
Culley Unit # 3 outage in Apr '05 timeframe (within test year period) - No Proforma adjustment required	\$0

Add-back annualized average Acid Cleaning expense for all Units (none in test year):

- Brown Units 1 & 2 @ \$ 200K / Unit every 6 years ($\$ 400K / 6 = \$ 67K$)	\$67,000
- Culley Unit 2 @ \$ 140K / Unit every 6 years ($\$ 140K / 6 = \$ 23K$)	\$23,000
- Culley Unit 3 @ \$ 200K / Unit every 6 years ($\$ 200K / 6 = \$ 33K$)	\$33,000

Total Proforma Amount

\$1,078,855

Boiler System Historical O&M Cost
2003 thru 2006

Project / Task / CC / Exp. Cat.	(Apr. '05 - Mar. '06)					
	2003 TOTAL		2004 TOTAL		2005 TOTAL	
	Actual	SUM	Actual	SUM	Actual	SUM
	TEST YEAR TOTAL					
	Actual	SUM	Actual	SUM	Actual	SUM
	2006 JUNE YTD					
	Actual	SUM	2006 TOTAL			
			Budget		SUM	
Total O&M - Boiler Systems		\$5,943,768		\$6,153,921		\$6,467,052
						\$5,985,511
						\$3,900,985
						\$7,041,857
ABB Controls-Boiler-SS		\$149,764		\$179,869		\$202,124
MAINT GENERAL PLANT		\$146,099		\$172,449		\$202,124
ABB EQUIPMENT CONTROLS - SIG		\$146,099		\$172,449		\$202,124
CONTRACT		\$97,213		\$75,400		\$68,982
DIRECT LABOR		\$30,599		\$58,287		\$79,577
LABOR LOADINGS		\$17,940		\$36,138		\$49,338
OTHER EXPENSES		\$27		\$750		\$0
VEHICLE USAGES		\$320		\$1,873		\$4,226
MAINT SCHLD OUTAGE		\$3,665		\$7,421		\$0
ABB EQUIPMENT CONTROLS - SIG		\$3,665		\$7,421		\$0
CONTRACT		\$3,665		\$7,421		\$0
DIRECT LABOR		\$0		\$0		\$0
LABOR LOADINGS		\$0		\$0		\$0

Boiler System Historical O&M Cost

2003 thru 2006

Project / Task / CC / Exp. Cat.	(Apr. '05 - Mar. '06)					
	2003 TOTAL		2004 TOTAL		2005 TOTAL	
	Actual	SUM	Actual	SUM	Actual	SUM
	TEST YEAR		TOTAL		2006 JUNE YTD	
	Actual	SUM	Actual	SUM	Actual	Budget SUM
ABB1 BOILER SYSTEMS		\$1,255,031		\$1,757,939		\$1,598,453
MAINT GEN MAT HND		\$0		\$0		\$0
BROWN UNIT 1 - SIG		\$0		\$0		\$0
<i>CONTRACT</i>		\$0		\$0		\$0
MAINT GEN MATL HNDLG		\$0		\$0		\$0
BROWN UNIT 1 - SIG		\$0		\$0		\$0
<i>CONTRACT</i>		\$0		\$0		\$0
MAINT GEN TECH SERV		\$0		\$0		\$0
BROWN UNIT 1 - SIG		\$0		\$0		\$0
<i>CONTRACT</i>		\$0		\$0		\$0

Boiler System Historical O&M Cost
2003 thru 2006

Project / Task / CC / Exp. Cat.	(Apr. '05 - Mar. '06)					
	2003 TOTAL		2004 TOTAL		2005 TOTAL	
	Actual	SUM	Actual	SUM	Actual	SUM
	TEST YEAR		2006 JUNE YTD		2006 TOTAL	
	Actual	SUM	Actual	SUM	Budget	SUM
MAINT GENERAL PLANT	\$698,938		\$975,419		\$962,724	\$988,012
BROWN UNIT 1 - SIG	\$698,938		\$975,419		\$962,724	\$988,012
CONTRACT	\$354,177		\$418,326		\$534,503	\$553,755
DIRECT LABOR	\$170,937		\$255,390		\$194,887	\$185,410
DIRECT MATERIAL	\$50,124		\$118,409		\$83,029	\$98,780
INDIRECT	\$20,899		\$24,843		\$29,403	\$36,346
LABOR LOADINGS	\$102,776		\$158,362		\$120,831	\$113,637
OTHER EXPENSES	\$25		\$88		\$73	\$84
MAINT OUTAGE MAT HND	\$0		\$0		\$0	\$0
BROWN UNIT 1 - SIG	\$0		\$0		\$0	\$0
CONTRACT	\$0		\$0		\$0	\$0
MAINT OUTAGE PLANT	\$40,619		\$214,190		\$60,268	\$72,695
BROWN UNIT 1 - SIG	\$40,619		\$214,190		\$60,268	\$72,695
CONTRACT	\$24,567		\$198,475		\$38,619	\$50,082
DIRECT LABOR	\$10,006		\$5,819		\$5,917	\$6,365
DIRECT MATERIAL	\$48		\$5,240		\$8,796	\$9,002
INDIRECT	\$15		\$1,048		\$3,254	\$3,300
LABOR LOADINGS	\$5,984		\$3,608		\$3,669	\$3,932
OTHER EXPENSES	\$0		\$0		\$13	\$13

Boiler System Historical O&M Cost
2003 thru 2006

Project / Task / CC / Exp. Cat.	(Apr. '05 - Mar. '06)					
	2003 TOTAL		2004 TOTAL		2005 TOTAL	
	Actual	SUM	Actual	SUM	Actual	SUM
	TEST YEAR TOTAL		2006 JUNE YTD		2006 TOTAL	
	Actual	SUM	Actual	SUM	Budget	SUM
MAINT OUTAGE PROD		\$0		\$0		\$0
BROWN UNIT 1 - SIG		\$0		\$0		\$0
DIRECT LABOR		\$0		\$0		\$0
LABOR LOADINGS		\$0		\$0		\$0
MAINT OUTAGE TECH SV		\$0		\$0		\$50,000
BROWN UNIT 1 - SIG		\$0		\$0		\$50,000
CONTRACT		\$0		\$0		\$50,000
OPER SYS&EQUIP-PS		\$515,473		\$568,329		\$575,461
BROWN UNIT 1 - SIG		\$515,473		\$568,329		\$575,461
DIRECT LABOR		\$313,398		\$341,556		\$349,799
DIRECT MATERIAL		\$9,118		\$12,161		\$6,634
INDIRECT		\$4,445		\$2,502		\$2,151
LABOR LOADINGS		\$188,393		\$211,815		\$216,876
OTHER EXPENSES		\$120		\$0		\$0
VEHICLE USAGES		\$0		\$295		\$0

Boiler System Historical O&M Cost
2003 thru 2006

Project / Task / CC / Exp. Cat.	(Apr. '05 - Mar. '06)					
	2003 TOTAL		2004 TOTAL		2005 TOTAL	
	Actual	SUM	Actual	SUM	Actual	SUM
	TEST YEAR		TEST YEAR		TEST YEAR	
	Actual	SUM	Actual	SUM	Actual	SUM
	2006 JUNE YTD		2006 JUNE YTD		2006 JUNE YTD	
	Actual	SUM	Actual	SUM	Actual	SUM
	2006 TOTAL		2006 TOTAL		2006 TOTAL	
	Budget	SUM	Budget	SUM	Budget	SUM
ABB2 BOILER SYSTEMS	\$1,564,000		\$1,592,162		\$1,449,175	
MAINT GEN MATL HNDLG	\$0		\$0		\$0	
BROWN UNIT 2 - SIG	\$0		\$0		\$0	
CONTRACT	\$0		\$0		\$0	
DIRECT MATERIAL	\$0		\$0		\$0	
MAINT GEN TECH SERV	\$0		\$0		\$0	
BROWN UNIT 2 - SIG	\$0		\$0		\$0	
CONTRACT	\$0		\$0		\$0	
MAINT GENERAL PLANT	\$762,571		\$751,403		\$795,739	
BROWN UNIT 2 - SIG	\$762,571		\$751,403		\$795,739	
CONTRACT	\$377,608		\$327,435		\$444,719	
DIRECT LABOR	\$173,050		\$169,644		\$136,686	
DIRECT MATERIAL	\$91,271		\$118,170		\$94,468	
INDIRECT	\$17,422		\$30,953		\$35,111	
LABOR LOADINGS	\$103,213		\$105,187		\$84,746	
OTHER EXPENSES	\$6		\$14		\$9	
VEHICLE USAGES	\$0		\$0		\$0	

Boiler System Historical O&M Cost
2003 thru 2006

Project / Task / CC / Exp. Cat.	(Apr. '05 - Mar. '06)					
	2003 TOTAL		2004 TOTAL		2005 TOTAL	
	Actual	SUM	Actual	SUM	Actual	SUM
	TEST YEAR		2006 JUNE YTD		2006 TOTAL	
	Actual	SUM	Actual	SUM	Budget	SUM
MAINT OUTAGE MAT HND		\$0		\$0		\$0
BROWN UNIT 2 - SIG		\$0		\$0		\$0
<i>CONTRACT</i>		\$0		\$0		\$0
MAINT OUTAGE PLANT		\$317,582		\$300,618		\$116,795
BROWN UNIT 2 - SIG		\$317,582		\$300,618		\$116,795
<i>CONTRACT</i>		\$293,386		\$275,345		\$103,356
<i>DIRECT LABOR</i>		\$9,742		\$10,785		\$5,311
<i>DIRECT MATERIAL</i>		\$8,072		\$5,867		\$4,118
<i>INDIRECT</i>		\$867		\$1,935		\$718
<i>LABOR LOADINGS</i>		\$5,515		\$6,687		\$3,293
MAINT OUTAGE TECH SV		\$0		\$0		\$0
BROWN UNIT 2 - SIG		\$0		\$0		\$0
<i>CONTRACT</i>		\$0		\$0		\$0

Boiler System Historical O&M Cost
2003 thru 2006

Project / Task / CC / Exp. Cat.	(Apr. '05 - Mar. '06)					
	2003 TOTAL		2004 TOTAL		2005 TOTAL	
	Actual	SUM	Actual	SUM	Actual	SUM
	TEST YEAR		TEST YEAR		TEST YEAR	
	Actual	SUM	Actual	SUM	Actual	SUM
	2006 JUNE YTD		2006 JUNE YTD		2006 JUNE YTD	
	Actual	SUM	Actual	SUM	Actual	SUM
	2006 TOTAL		2006 TOTAL		2006 TOTAL	
	Budget	SUM	Budget	SUM	Budget	SUM
OPER SYS&EQUIP-PS	\$483,847		\$540,141		\$536,642	
BROWN UNIT 2 - SIG	\$483,847		\$540,141		\$536,642	
DIRECT LABOR	\$301,360		\$331,653		\$330,627	
DIRECT MATERIAL	\$1,192		\$2,112		\$831	
EMPLOYEE BENEFITS	\$384		\$0		\$0	
INDIRECT	\$364		\$409		\$194	
LABOR LOADINGS	\$180,526		\$205,672		\$204,990	
OTHER EXPENSES	\$20		\$0		\$0	
VEHICLE USAGES	\$0		\$295		\$0	
FBC Controls-Boiler-SS	\$148,627		\$111,985		\$223,118	
MAINT GENERAL PLANT	\$148,339		\$111,985		\$223,118	
FBC EQUIPMENT CONTROLS - SIG	\$148,339		\$111,985		\$223,118	
CONTRACT	\$108,864		\$78,157		\$125,337	
DIRECT LABOR	\$23,866		\$20,544		\$60,073	
LABOR LOADINGS	\$14,102		\$12,737		\$37,246	
OTHER EXPENSES	\$1,164		\$369		\$0	
VEHICLE USAGES	\$343		\$178		\$462	

Boiler System Historical O&M Cost
2003 thru 2006

Project / Task / CC / Exp. Cat.	(Apr. '05 - Mar. '06)											
	2003 TOTAL		2004 TOTAL		2005 TOTAL		TEST YEAR TOTAL		2006 JUNE YTD		2006 TOTAL	
	Actual	SUM	Actual	SUM	Actual	SUM	Actual	SUM	Actual	SUM	Budget	SUM
MAINT OUTAGE PLANT		\$288		\$0		\$0		\$0		\$0		\$0
FBC EQUIPMENT CONTROLS - SIG		\$288		\$0		\$0		\$0		\$0		\$0
CONTRACT		\$288		\$0		\$0		\$0		\$0		\$0
DIRECT LABOR		\$0		\$0		\$0		\$0		\$0		\$0
LABOR LOADINGS		\$0		\$0		\$0		\$0		\$0		\$0
FBC1 BOILER SYSTEM		\$362,967		\$303,109		\$339,470		\$327,138		\$125,089		\$317,991
MAINT GENERAL PLANT		\$46,805		\$67,272		\$98,996		\$103,524		\$44,580		\$114,209
CULLEY UNIT 1 - SIG		\$46,805		\$67,272		\$98,996		\$103,524		\$44,580		\$114,209
CONTRACT		\$16,436		\$8,334		\$40,620		\$42,556		\$6,607		\$35,000
DIRECT LABOR		\$13,505		\$28,526		\$30,957		\$34,102		\$23,028		\$42,270
DIRECT MATERIAL		\$7,483		\$10,353		\$6,253		\$4,404		\$1,067		\$10,000
INDIRECT		\$1,331		\$2,071		\$1,878		\$1,596		\$235		\$2,000
LABOR LOADINGS		\$8,050		\$17,686		\$19,193		\$20,781		\$13,587		\$24,939
VEHICLE USAGES		\$0		\$303		\$95		\$86		\$57		\$0

Boiler System Historical O&M Cost
2003 thru 2006

Project / Task / CC / Exp. Cat.	(Apr. '05 - Mar. '06)											
	2003 TOTAL		2004 TOTAL		2005 TOTAL		TEST YEAR TOTAL		2006 JUNE YTD		2006 TOTAL	
	Actual	SUM	Actual	SUM	Actual	SUM	Actual	SUM	Actual	SUM	Budget	SUM
MAINT OUTAGE PLANT		\$157,880		\$57,702		\$48,019		\$47,950		\$1,819		\$0
CULLEY UNIT 1 - SIG		\$157,880		\$57,702		\$48,019		\$47,950		\$1,819		\$0
<i>CONTRACT</i>		\$141,441		\$51,148		\$40,274		\$39,782		\$705		\$0
<i>DIRECT LABOR</i>		\$6,201		\$3,941		\$4,283		\$4,549		\$631		\$0
<i>DIRECT MATERIAL</i>		\$6,150		\$141		\$556		\$556		\$91		\$0
<i>INDIRECT</i>		\$615		\$28		\$206		\$206		\$20		\$0
<i>LABOR LOADINGS</i>		\$3,473		\$2,444		\$2,656		\$2,813		\$372		\$0
<i>VEHICLE USAGES</i>		\$0		\$0		\$44		\$44		\$0		\$0
OPER SYS&EQUIP-PS		\$158,283		\$178,135		\$192,455		\$175,664		\$78,689		\$203,781
CULLEY UNIT 1 - SIG		\$158,283		\$178,135		\$192,455		\$175,664		\$78,689		\$203,781
<i>CONTRACT</i>		\$0		\$0		\$0		\$0		\$0		\$500
<i>DIRECT LABOR</i>		\$98,822		\$109,946		\$118,799		\$108,794		\$49,490		\$127,850
<i>LABOR LOADINGS</i>		\$59,461		\$68,189		\$73,656		\$66,870		\$29,199		\$75,431

Boiler System Historical O&M Cost 2003 thru 2006

(Apr. '05 - Mar. '06)

Project / Task / CC / Exp. Cat.	2003 TOTAL		2004 TOTAL		2005 TOTAL		TEST YEAR	2006 JUNE YTD		2006 TOTAL	
	Actual	SUM	Actual	SUM	Actual	SUM	TOTAL Actual SUM	Actual	SUM	Budget	SUM
FBC2 BOILER SYSTEM	\$1,030,965		\$545,896		\$826,907		\$530,979		\$709,445		\$884,938
MAINT GENERAL PLANT	\$304,523		\$189,378		\$271,390		\$245,762		\$123,989		\$217,814
CULLEY UNIT 2 - SIG	\$304,523		\$189,378		\$271,390		\$245,762		\$123,989		\$217,814
CONTRACT	\$200,591		\$100,229		\$107,793		\$88,424		\$16,138		\$45,000
DIRECT LABOR	\$35,506		\$38,508		\$59,065		\$59,146		\$32,744		\$63,405
DIRECT MATERIAL	\$38,262		\$18,697		\$51,808		\$45,905		\$45,278		\$60,000
INDIRECT	\$8,624		\$7,965		\$15,906		\$15,841		\$10,257		\$12,000
LABOR LOADINGS	\$21,540		\$23,880		\$36,621		\$36,108		\$19,319		\$37,409
VEHICLE USAGES	\$0		\$99		\$197		\$338		\$253		\$0
MAINT OUTAGE PLANT	\$421,730		\$80,525		\$280,231		\$16,707		\$453,442		\$361,260
CULLEY UNIT 2 - SIG	\$421,730		\$80,525		\$280,231		\$16,707		\$453,442		\$361,260
CONTRACT	\$348,935		\$79,609		\$234,812		(\$94,356)		\$334,581		\$287,000
DIRECT LABOR	\$23,949		\$564		\$16,399		\$28,885		\$30,726		\$20,290
DIRECT MATERIAL	\$25,925		\$0		\$15,030		\$52,843		\$56,696		\$35,000
INDIRECT	\$7,878		\$0		\$3,339		\$12,317		\$13,160		\$7,000
LABOR LOADINGS	\$15,043		\$351		\$10,168		\$17,018		\$18,128		\$11,971
OTHER EXPENSES	\$0		\$0		\$467		\$0		\$0		\$0
VEHICLE USAGES	\$0		\$0		\$17		\$0		\$152		\$0

Boiler System Historical O&M Cost
2003 thru 2006

Project / Task / CC / Exp. Cat.	(Apr. '05 - Mar. '06)					
	2003 TOTAL		2004 TOTAL		2005 TOTAL	
	Actual	SUM	Actual	SUM	Actual	SUM
	TEST YEAR		TEST YEAR		TEST YEAR	
	Actual	SUM	Actual	SUM	Actual	SUM
	2006 JUNE YTD		2006 JUNE YTD		2006 JUNE YTD	
	Actual	SUM	Actual	SUM	Actual	SUM
	2006 TOTAL		2006 TOTAL		2006 TOTAL	
	Budget	SUM	Budget	SUM	Budget	SUM
OPER SYS&EQUIP-PS	\$304,713		\$275,994		\$275,285	
CULLEY UNIT 2 - SIG	\$304,713		\$275,994		\$275,285	
CONTRACT	\$0		\$0		\$0	
DIRECT LABOR	\$190,194		\$169,861		\$168,731	
LABOR LOADINGS	\$114,519		\$105,349		\$104,614	
VEHICLE USAGES	\$0		\$784		\$1,941	
FBC3 BOILER SYSTEM	\$1,432,413		\$1,662,961		\$1,827,806	
MAINT GENERAL PLANT	\$455,900		\$554,441		\$508,114	
CULLEY UNIT 3 - SIG	\$455,900		\$554,441		\$508,114	
CONTRACT	\$109,007		\$308,976		\$206,940	
DIRECT LABOR	\$106,241		\$106,661		\$112,983	
DIRECT MATERIAL	\$140,566		\$51,960		\$88,362	
INDIRECT	\$37,202		\$20,222		\$28,907	
LABOR LOADINGS	\$62,884		\$66,134		\$70,050	
OTHER EXPENSES	\$0		\$92		\$0	
VEHICLE USAGES	\$0		\$395		\$873	

Boiler System Historical O&M Cost
2003 thru 2006

Project / Task / CC / Exp. Cat.	(Apr. '05 - Mar. '06)					
	2003 TOTAL		2004 TOTAL		2005 TOTAL	
	Actual	SUM	Actual	SUM	Actual	SUM
	TEST YEAR		TEST YEAR		TEST YEAR	
	Actual	SUM	Actual	SUM	Actual	SUM
	2006 JUNE YTD		2006 JUNE YTD		2006 JUNE YTD	
	Actual	SUM	Actual	SUM	Actual	SUM
	2006 TOTAL		2006 TOTAL		2006 TOTAL	
	Budget	SUM	Budget	SUM	Budget	SUM
MAINT OUTAGE PLANT						
	\$471,737		\$577,728		\$783,225	
						\$754,788
						\$723
						\$633,607
CULLEY UNIT 3 - SIG	\$471,737		\$577,728		\$783,225	
						\$754,788
						\$723
						\$633,607
<i>CONTRACT</i>	\$347,396		\$445,601		\$536,761	
						\$536,178
						\$264
						\$540,000
<i>DIRECT LABOR</i>	\$30,662		\$37,474		\$30,287	
						\$29,540
						\$0
						\$21,137
<i>DIRECT MATERIAL</i>	\$64,837		\$58,357		\$147,315	
						\$124,345
						\$223
						\$50,000
<i>INDIRECT</i>	\$11,586		\$13,062		\$50,084	
						\$46,409
						\$216
						\$10,000
<i>LABOR LOADINGS</i>	\$17,257		\$23,234		\$18,778	
						\$18,315
						\$0
						\$12,471
<i>OTHER EXPENSES</i>	\$0		\$0		\$0	
						\$0
						\$20
						\$0
OPER SYS&EQUIP-PS	\$504,777		\$530,792		\$536,467	
						\$537,795
						\$261,538
						\$609,717
CULLEY UNIT 3 - SIG	\$504,777		\$530,792		\$536,467	
						\$537,795
						\$261,538
						\$609,717
<i>CONTRACT</i>	\$0		\$0		\$0	
						\$0
						\$0
						\$500
<i>DIRECT LABOR</i>	\$315,522		\$327,244		\$330,526	
						\$332,791
						\$164,489
						\$383,156
<i>LABOR LOADINGS</i>	\$189,254		\$202,958		\$204,927	
						\$203,990
						\$97,049
						\$226,062
<i>VEHICLE USAGES</i>	\$0		\$590		\$1,014	
						\$1,014
						\$0
						\$0



Photo 12 – Scrubber 2B Outlet Duct Column Base

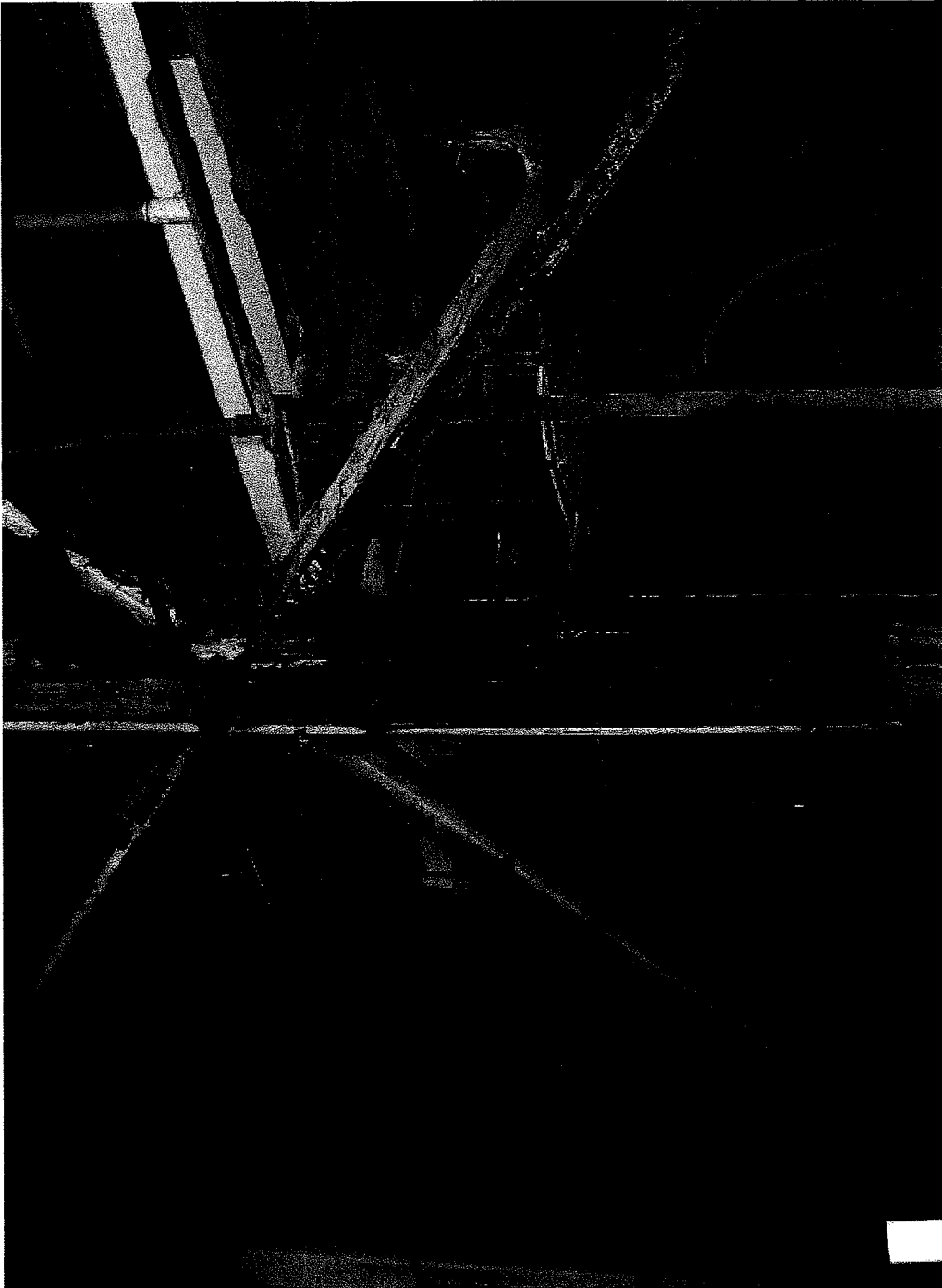
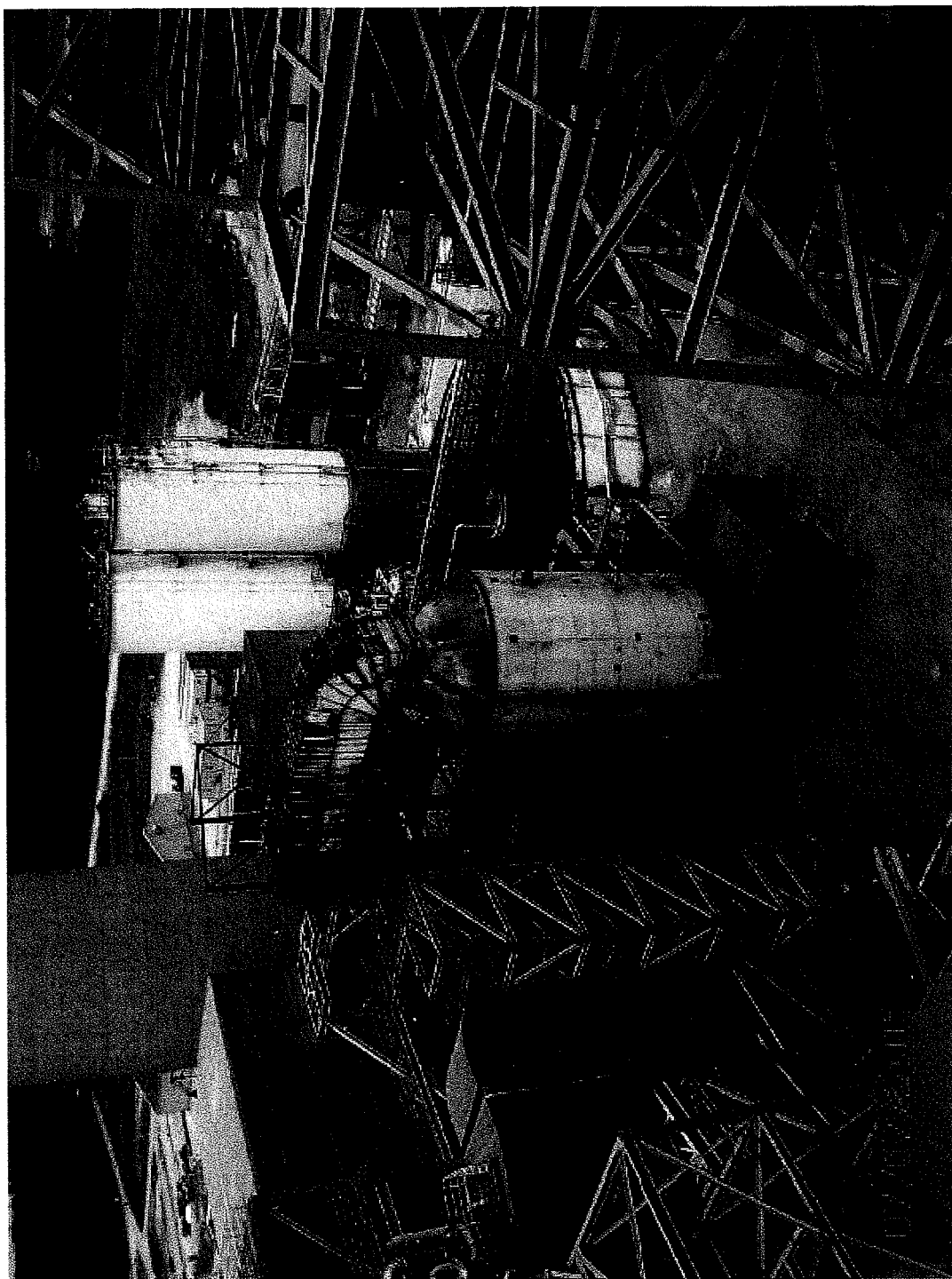


Photo 60 -- Unit 1 Filter Building Structural Steel Corrosion



.Photo 1 – Unit 1 South Absorber (1A)

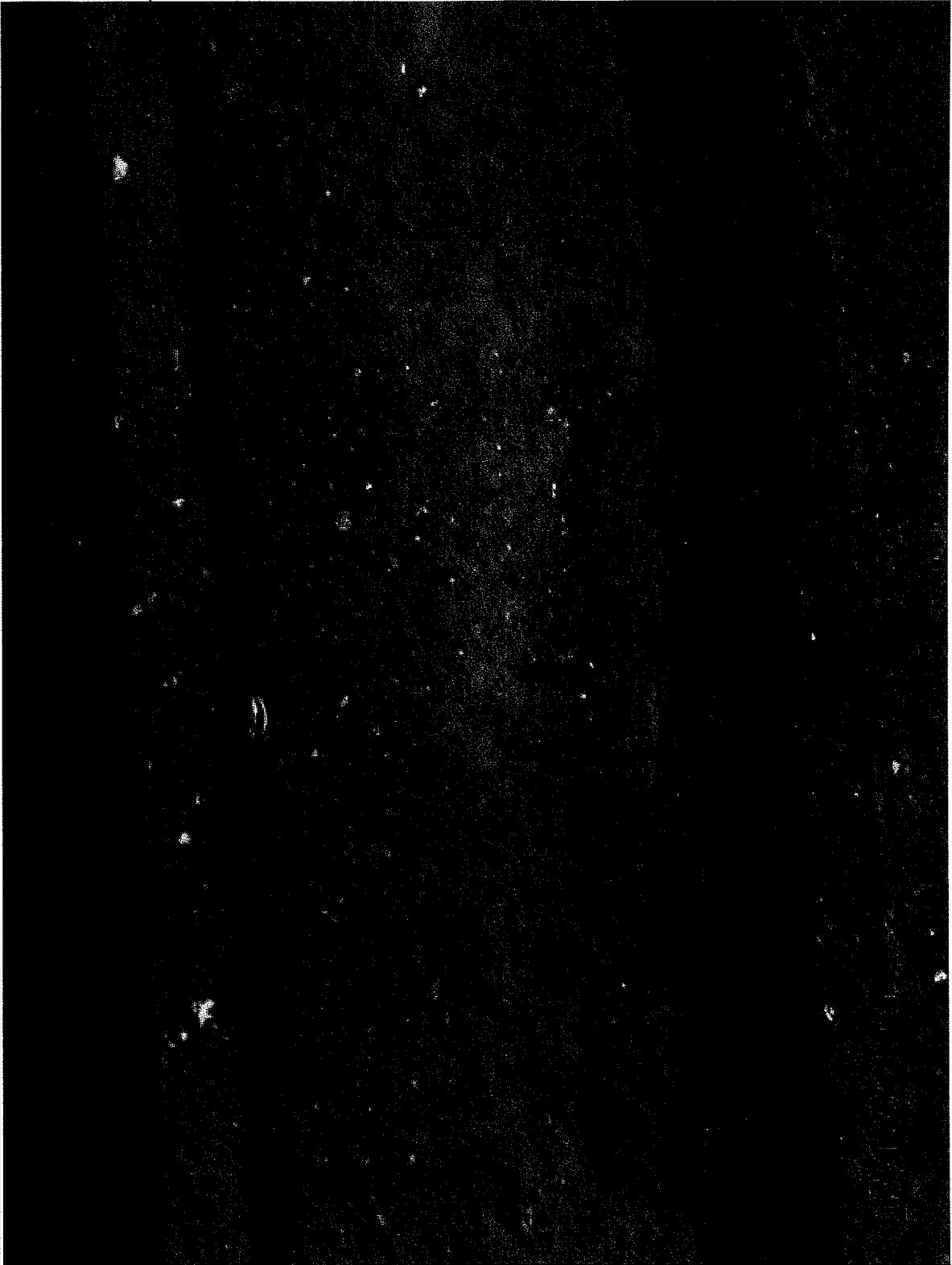


Photo 4 - Scrubber 1A Flange Corrosion and Lift



Photo 51 – Unit 2 Vacuum Filter Belt Return



Photo 46 – Unit 2 Vacuum Filters

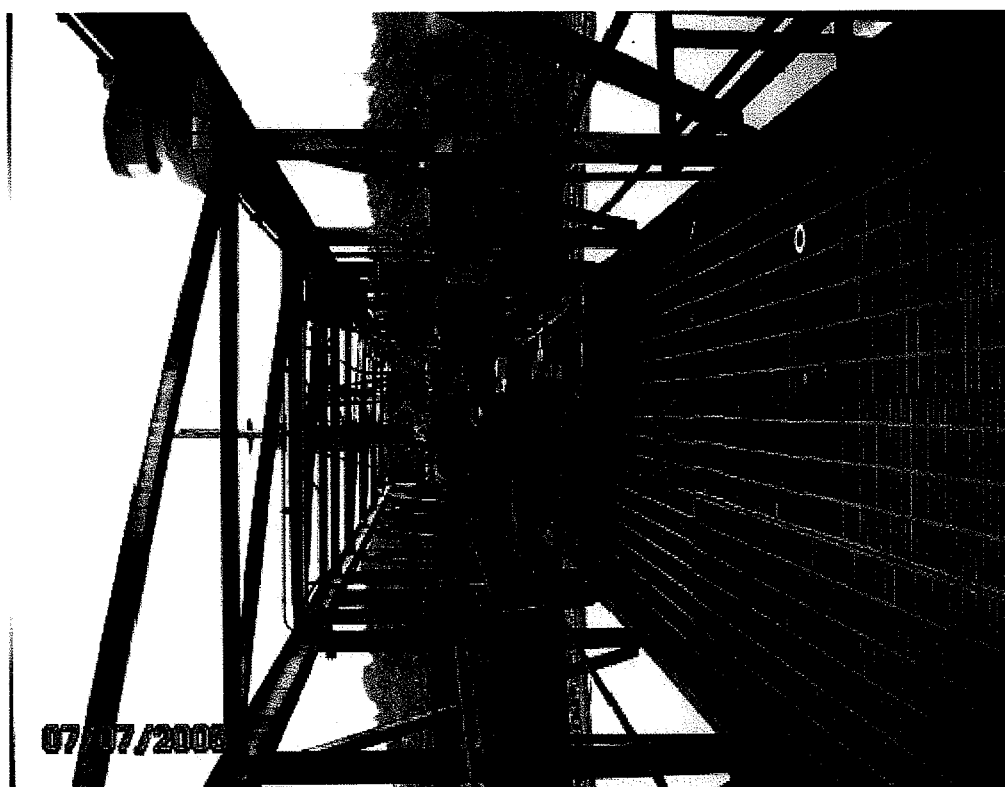


Photo 43 – Unit 1 Thickener Rake Drive



Photo 34 – Thickener Base Flange and Wall Corrosion



Photo 26 – Unit 1 Thickener Launder Corrosion



Photo 24 – Unit 1 Catwalk

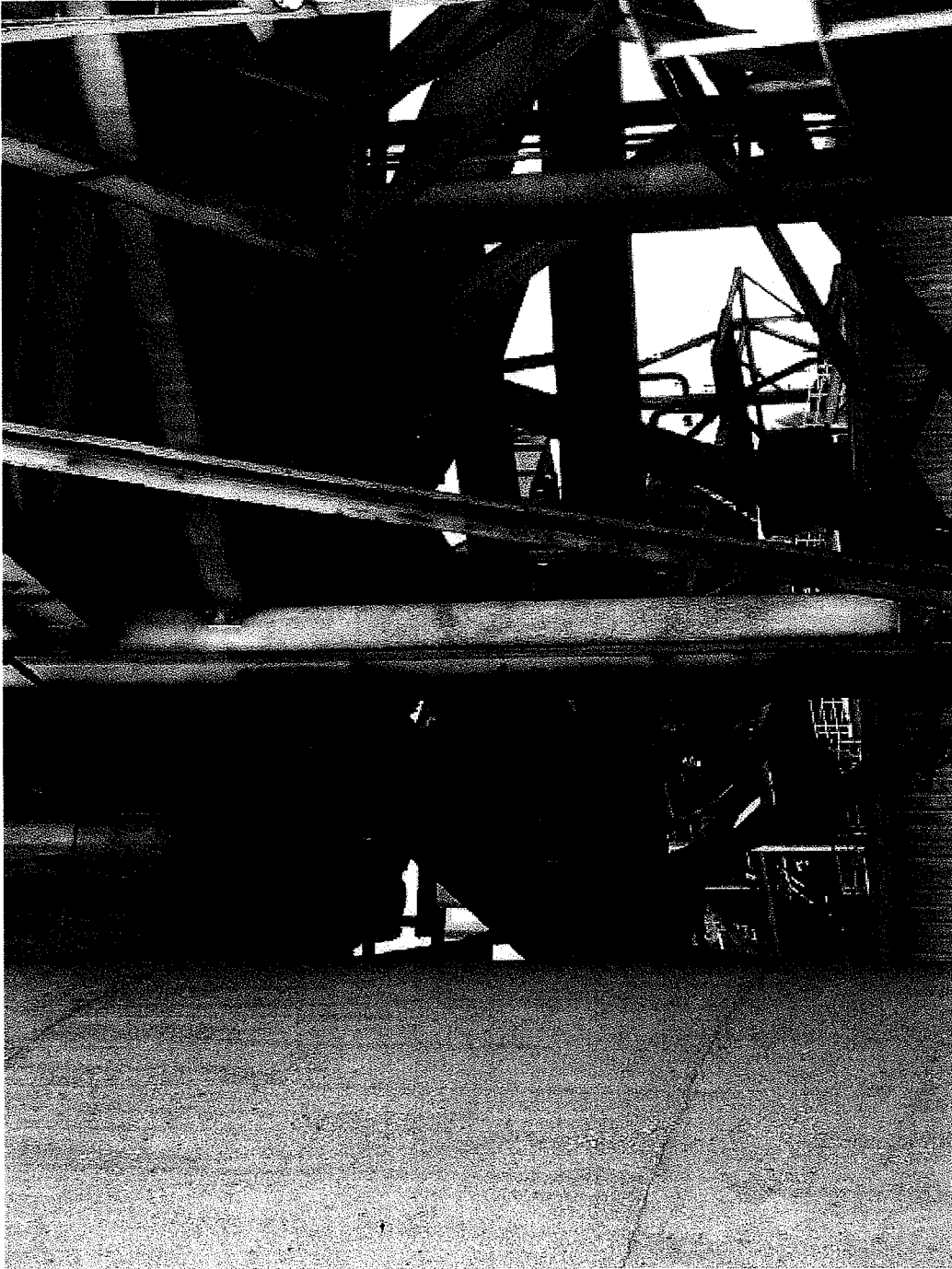


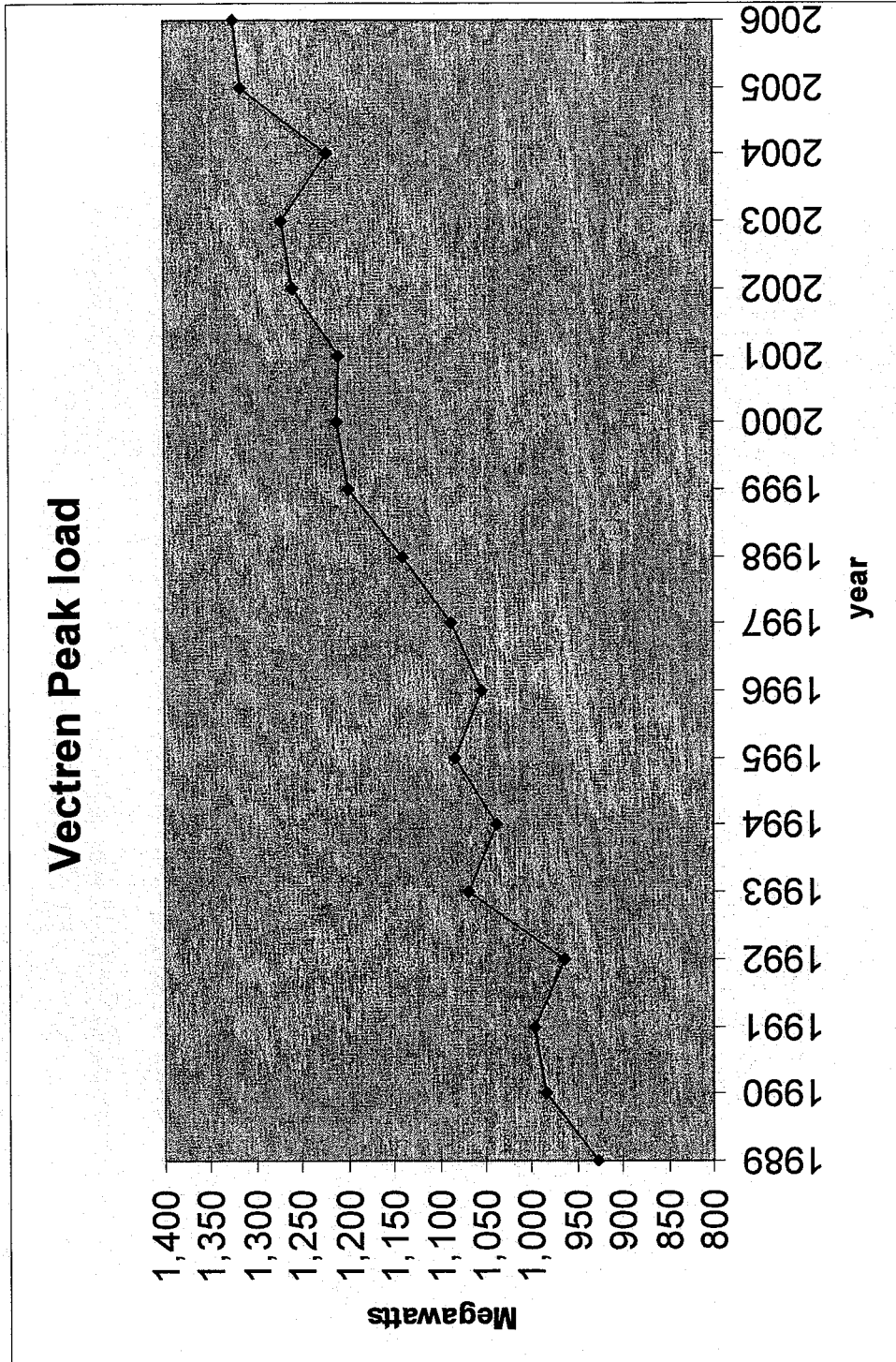
Photo 20 – Scrubber 2B Stack Inlet and Support Steel



Photo 16 – Outlet Duct Support Steel, Scrubber 1A

Maintenance Cost to extend Operation of FGD Systems at ABB

Equipment or location	FGD#1	FGD#2	TOTAL
Thickener Bridge corrosion	\$16,000	\$24,000	\$40,000
Thickener draining, undflow line & cone repairs	\$10,000	\$10,000	\$20,000
Regen. Valve repairs and/or replacement	\$12,000	\$12,000	\$24,000
Quench spray pipe & spray bars	\$12,000	\$10,000	\$22,000
Service water pipe cleaning	\$30,000	\$20,000	\$50,000
Scrub process & Ash Pond piping replacement	\$40,000	\$25,000	\$65,000
Inlet duct repairs	\$30,000	\$40,000	\$70,000
Outlet duct & turning vanes	\$75,000	\$50,000	\$125,000
Expansion joints material with flange & drain repair	\$50,000	\$30,000	\$80,000
Recirc pump suction	\$15,000	\$20,000	\$35,000
Hattman conveyors & rotary valves		\$54,000	\$54,000
Thickener tank walls, weir, top, & foot anchors	\$50,000	\$15,000	\$65,000
Lime silo pneumatic piping & baghouse		\$15,000	\$15,000
Absorber vessel walls, footer & Anchors	\$75,000	\$40,000	\$115,000
Lime mixing tank wall, floor, footer/anchors	\$30,000	\$20,000	\$50,000
Platforms, Handrail, General safety items	\$50,000	\$30,000	\$80,000
Structural cross bracing, column footers, & beams	\$60,000	\$30,000	\$90,000
Steel and other costs	\$45,000	\$30,000	\$75,000
Total	\$600,000	\$475,000	\$1,075,000



Ash Disposal Program Savings:

		Present Value	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	total
Discount Rate			8.5%											
Present Value Factor			1.0000	0.9217	0.8495	0.7829	0.7216	0.6650	0.6129	0.5649	0.5207	0.4799	0.4423	
Current Operation														
FBC	O&M	16.693	1.2	1.2	1.2	1.2	3	3	3.1	3.1	3.2	3.2	3.2	26.6
	Capital	8.162			5	5								10
ABB	O&M	0.000												0
FGD	Capital	6.162	1.5	0.8	0.95	1.2	0	1.2	0	1.3	0	0.7	0.7	8.35
Ash	Capital	7.308			3				5	3				11
Total														
	O&M	16.693												26.6
	Capital	21.631												29.35
Alternate Plan														
FBC	O&M	12.961	2.5	2.5	3	3	0.1	0.1	0.1	0.1	0.1	3.2	3.2	17.9
	Capital	5.949								5	6			11
ABB	O&M	3.554	1	1	1	1								4
FGD	Capital	6.162	1.5	0.8	0.95	1.2	0	1.2	0	1.3	0	0.7	0.7	8.35
Ash	Capital	2.740				3.5								3.5
Total														
	O&M	16.515												21.9
	Capital	14.851												22.85

Long-Term Savings Calculation:

26.6	Current Operation O&M
- 21.9	Proposed Plan O&M
4.7	O&M Savings
29.35	Current Operation Capital
- 22.85	Proposed Plan Capital
6.5	Capital Savings

Present Value Savings Calculation:

16.693	Current Operation O&M
- 16.515	Proposed Plan O&M
0.178	O&M Savings
21.631	Current Operation Capital
- 14.851	Proposed Plan Capital
6.781	Capital Savings

Vectren Energy South - Electric Power Supply
Aging Workforce Support Calculations
Test Year Ended March 31, 2006

Power Supply Adjustment to Test Year Spending Level - Evansville Region - Electric										
Project Name	ABW Process	Project	Task	Account	Training	PERC	Business	Est. Cost	Detailed Description	Responsibility
Aging Workforce: Training		ABBTRAIN\FBCTRAIN\ VPPTRAIN	281 & 386	6213000	A23	506	S	\$1,392,899 \$493,000	Ron Jochum, Dennis Glancy, and Chde Hale have developed a detailed proposal. This proposal identifies \$493K of incremental training development expense	Jochum, Glancy, Hale
(1)										
(2)	Electrician Apprentices				A23			\$338,248	Five electrician apprentices; 100% O&M	Jochum
(3)	Repair Mechanic Apprentices				A23			\$394,162	Six repair mechanic apprentices; 100% O&M	Jochum
(4)	Engineer Co-op	Engr. Supv. & Plan			A23			\$10,971	Implement an engineering co-op program including 1 electric co-op during each semester; \$23K/co-op (loaded at 55%) 30% O&M	Francis
(5)	Auxiliary Equipment Operator Apprentices				A23			\$46,609	One auxiliary equipment operator; 100% O&M	Jochum
(6)	Coal Yard Operator				A23			\$65,031	One coal yard operator; 100% O&M	Jochum
(7)	Supervisor Retirement Impact							\$44,878		

Power Supply - Bargaining-Unit Workforce
Retirement Schedule Based-On Age 62

Job Classifications significantly impacted by the Aging Workforce Issue with 4 Year Apprenticeship Programs:

Job Classification	# of Active BU Employees as of 6/23/06	2007 Planned Hires associated with the Aging Workforce Issue	# Eligible for Retirement (Age > 62)									
			2007 - 2010		2011 - 2014		2015 - 2018		2019 - 2022		2023 - 2026	
			#	%	#	%	#	%	#	%	#	%
Electrician	28	5	8	21%	3	11%	6	21%	3	11%	2	7%
Mechanic Repair	32	6	4	13%	7	22%	10	31%	8	25%	1	3%

Note: The highlighted Bargaining Unit Job Classifications and all Non-Bargaining Unit Supervisors are considered in the Aging Workforce Proforma

Job Classifications significantly impacted by the Aging Workforce Issue with 3 Year Apprenticeship Programs:

Job Classification	# of Active BU Employees as of 6/23/06	2007 Planned Hires associated with the Aging Workforce Issue	# Eligible for Retirement (Age > 62)									
			2007 - 2009		2010 - 2012		2013 - 2015		2016 - 2018			
			#	%	#	%	#	%	#	%		
Operator Coal/Yard Equip.	24	1	1	4%	3	13%	7	29%	3	13%		
Operator Auxiliary Equipment	32	1	1	3%	3	9%	2	6%	6	19%		
Operator Control	12	Causes opening in "Aux. Equip. Oper."	0	0%	1	8%	3	25%	2	17%		
Operator Equip.	12	Causes opening in "Aux. Equip. Oper."	0	0%	2	17%	2	17%	2	17%		
Operator Relief	8	Causes opening in "Aux. Equip. Oper."	0	0%	1	13%	0	0%	2	25%		

Note: The highlighted Bargaining Unit Job Classifications and all Non-Bargaining Unit Supervisors are considered in the Aging Workforce Proforma

Other Job Classifications not significantly impacted by the Aging Workforce Issue:

Job Classification	# of Active BU Employees as of 6/23/06	2007 Planned Hires associated with the Aging Workforce Issue in next 4 Years	# Eligible for Retirement (Age > 62)									
			2007 - 2010		2011 - 2014		2015 - 2018		2019 - 2022		2023 - 2026	
			#	%	#	%	#	%	#	%	#	%
Janitor Plant	3	N/A	0	0%	1	33%	2	67%	0	0%	0	0%
Lab Technician	8	N/A	0	0%	3	38%	3	38%	2	25%	0	0%
Specialist Material	4	N/A	0	0%	2	50%	1	25%	1	25%	0	0%

Eligible for Retirement (Age > 62)

2007 Planned Hires associated with the Aging Workforce Issue	# Eligible for Retirement (Age > 62)									
	2007 - 2010		2011 - 2014		2015 - 2018		2019 - 2022		2023 - 2026	
	# Retiring	%	# Retiring	%	# Retiring	%	# Retiring	%	# Retiring	%
All Power Supply BU Retirements	15	9%	32	20%	42	26%	39	24%	16	10%

**SOUTHERN INDIANA GAS AND ELECTRIC COMPANY
d/b/a VECTREN ENERGY DELIVERY OF INDIANA, INC.
(VECTREN SOUTH – ELECTRIC)**

43111

IURC CAUSE NO. _____

**DIRECT TESTIMONY
OF
MICHAEL W. CHAMBLISS
MANAGER ELECTRIC TRANSMISSION OPERATIONS**

ON

**TRANSMISSION FACILITY INVESTMENT, IMPORT CAPABILITY AND THE SEVEN
FACTOR TEST**

SPONSORING PETITIONER'S EXHIBITS MWC-1 THROUGH MWC-3

Direct Testimony of Michael W. Chambliss

INTRODUCTION

Q. Please state your name, business address, and occupation.

A. My name is Michael W. Chambliss. My business address is 1 North Main Street, Evansville, Indiana 47711. I am the Manager of Energy Delivery Operations of Southern Indiana Gas and Electric Company d/b/a Vectren Energy Delivery of Indiana, Inc. ("Vectren South" or "Company").

Q. What are your duties in your present position?

A. I have responsibility for the operation of Vectren South electric transmission and distribution facilities.

Q. How long have you been employed by Vectren South?

A. I have been employed by Vectren South and its predecessor Southern Indiana Gas and Electric since 1978. For the past 28 years, I have held a variety of positions including Manager of transmission system operations, North/West district manager, and General Foreman in electric substation maintenance and construction.

Q. What is your educational background?

A. I received a Bachelor of Science degree in business administration from the University of Southern Indiana in 1999 and a master's degree in management from Oakland City University in 2002.

Q. Have you previously testified before this Commission?

A. No.

Q. What is the purpose of your testimony?

A. My testimony describes Vectren South's transmission facilities, our current manner of operating the facilities, our recent evaluation of the facilities and their functionality as part of the Midwest ISO Transmission Facilities footprint, and our plans for improving our electric transmission system to reliably serve our load and to increase import and export capability. My testimony also addresses the

1 classification of Vectren South's system into electric transmission assets and
2 electric distribution assets using the FERC "seven factor" test.

3
4 **OPEN ACCESS**

5
6 **Q. Over your 28 years of work in Vectren South, have you seen any change in**
7 **how the electric transmission system is used?**

8 A. Yes, Prior to 1996, the Vectren South electric transmission system was designed
9 to serve Vectren South's internal load. To meet those needs, electricity
10 generated within the Vectren South service territory had to be transmitted to
11 customers within the Vectren South system. The transmission system was
12 largely "self-contained" except when internal generation was unable to meet
13 internal demand, at which time power had to be brought into the Vectren South
14 system (imported) from outside the service territory. Just as the Vectren South
15 transmission system was designed to handle the demands of the Vectren South
16 service territory, the transmission systems of neighboring utilities were designed
17 to handle their internal needs. Agreements between neighboring utilities allowed
18 for the importation of power in those situations where a utility could not meet the
19 needs of its territory with internal generation for any reason. These interconnects
20 also provided for economic exchange of power with the neighboring
21 interconnected utility.

22
23 Then, in 1996, FERC implemented open transmission access through FERC's
24 Orders 888 and 889, which provided for nondiscriminatory transmission access.
25 Those two orders mark the beginning of a dramatic change to the way in which
26 electric transmission systems, including the Vectren South system, are used.
27 This change in the intended use of the system has directly impacted operation of
28 the Vectren South facilities.

29
30 **Q. How did those FERC Orders change how utilities use their transmission**
31 **systems?**

32 A. With the advent of open transmission access pursuant to FERC Orders 888 and
33 889, the transmission systems of utilities became a means of transmitting power

1 across service territories and beyond neighboring utilities to any other purchasing
2 utility that requested the power, provided the transmission facilities could
3 accommodate the request. As part of this open transmission access, the
4 transmission facilities within the Vectren South service territory were called upon
5 to serve those outside the Vectren South service territory as well as those within
6 the Vectren South service territory. In essence, the transmission infrastructure
7 that was designed by Vectren South to serve as a well-traveled local access road
8 was pressed into service as an interstate highway. This problem is not unique to
9 Vectren South. Indeed, Vectren South's historic design and use of its
10 transmission system matched the design and operation of its peers across the
11 industry.

12
13 **Q. Has FERC issued any other orders since those open access transmission**
14 **orders that further affected the operation of Vectren South's transmission**
15 **system?**

16 **A.** Yes. To further FERC's open access initiative, FERC implemented Order 2000
17 in December 1999, which defined the requirements of Regional Transmission
18 Organizations (RTO), and strongly encouraged transmission owners to join an
19 RTO. The Order identified eight minimum functions of an RTO:

- 20 1. Develop a transmission tariff and administration that will promote efficient
21 use and expansion of transmission and generation facilities.
- 22 2. Develop congestion management procedures.
- 23 3. Develop and implement loop flow and parallel path procedures.
- 24 4. Serve as the provider of last resort for all ancillary services.
- 25 5. Operate a single OASIS (Open-Access Same-Time Information System)
26 for all transmission under its control and be responsible for independently
27 calculating Total Transmission Capacity and Available Transmission
28 Capacity.
- 29 6. Monitor markets to measure market power and market design flaws and
30 propose remedies.
- 31 7. Plan and coordinate necessary transmission upgrades and additions,
32 including coordinating its efforts with State regulators, and
- 33 8. Develop mechanisms to coordinate its activities with other regions,
34 whether or not an RTO exists in those regions, especially concerning
35 reliability and market interfaces.

36

37

MIDWEST ISO CONTROL

Q. Did Vectren South join an RTO?

A. Yes, Vectren South became a member of the Midwest Independent System Operator (MISO or Midwest ISO) in 1999. Subsequently, in 2001, Vectren South sought and gained Commission approval to cede functional control of the Vectren South transmission system to MISO in 2001. As a result, the Midwest ISO now has operational control of the Vectren South transmission system.

Q. How has Midwest ISO control of the Vectren South transmission system affected Vectren South?

A. Midwest ISO control of the Vectren South Transmission system requires the Vectren South transmission system to serve transmission demand from across the Midwest ISO footprint. This represents a significant change for a transmission system originally designed and constructed to move its own generation to its own load centers and to import and export only the power needed to replace loss of its internal generation and meet demand within its own system or support local economic transactions.

Q. What is the practical effect of Midwest ISO control of the Vectren South transmission system?

A. Open access, Midwest ISO control, and other Midwest ISO market activities such as the day ahead and realtime power markets, all cause Vectren South's transmission system to be used for a significantly different purpose than that for which it was originally designed and constructed. Similarly, Vectren South's planning and operational models were designed and developed to monitor only Vectren's internal facilities. Midwest ISO planning and operational models monitor all facilities in the Midwest ISO's footprint, as well as facilities outside Midwest ISO's footprint that are important to maintain reliability within the Midwest ISO footprint. Midwest ISO relies upon each of the transmission owners, including Vectren South, to feed system data to the Midwest ISO – that information, combined with data otherwise collected by the Midwest ISO provides the Midwest ISO with the real-time information it needs to manage the power grid

1 across the entire Midwest ISO footprint. The Midwest ISO footprint extends over
2 15 states and Canada, and it includes 98,600 miles of facilities. Vectren South's
3 facilities represent about 1.6% of the Midwest ISO-controlled facilities. While that
4 percentage is small, Vectren South sits at the southern border of the Midwest
5 ISO footprint, and that position exacerbates Vectren South's own north-south
6 system constraints, as Vectren South is a key portal for import of power into the
7 Midwest ISO from points south and southwest to any destination within the
8 Midwest ISO footprint as well as export of power from anywhere within the
9 Midwest ISO footprint to points south and southwest. For example, if
10 Commonwealth Edison in Chicago sells power to TVA, that power flows south at
11 least in part through the Vectren South system.

12
13 **Q. Has the Midwest ISO's approach to system monitoring affected Vectren**
14 **South in other ways?**

15 A. Yes, Midwest ISO is able to monitor all facilities in its footprint and the flow of
16 power from service territory to service territory. In that context, Vectren South is
17 affected by system constraints that were never identified heretofore in Vectren
18 South's own planning and operational models, because those models focused on
19 the Vectren South system's ability to move internal generation to internal load
20 centers.

21
22 **SYSTEM CONSTRAINTS**

23
24 **Q. What is a system constraint and why is it a concern for Vectren South?**

25 A. A system constraint is a loading of any facility to its maximum rating – for
26 example, power passing through the Vectren South service territory combined
27 with the power being transmitted internally within the Vectren South system, both
28 of which share Vectren South transmission lines and other facilities, can result in
29 system constraints. Those kinds of system constraints had not been a problem
30 pre-open access when the Vectren South transmission system operated largely
31 as a self-contained system, because at that time there were no great quantities
32 of power passing through the Vectren South service territory. These kinds of
33 system constraints, which do not affect reliability within the Vectren South system

1 itself, can cause Vectren South to incur reliability standards violations in the
2 context of the overall Midwest ISO system. This problem is not unique to
3 Vectren South's system. Similar system constraints within other systems, inside
4 and outside of the Midwest ISO footprint, impact Vectren South's own ability to
5 import and export power.

6
7 **Q. How do these constraints and reliability standards present a risk to Vectren**
8 **South?**

9 A. Prior to the enactment of the Energy Policy Act of 2005 (EPAAct 2005), constraints
10 monitored by the Midwest ISO simply limited Vectren South's ability to import and
11 export power and those limitations created logistical challenges for Vectren
12 South's transmission planning and transmission system operations. Similarly,
13 reliability standards violations, which were monitored by the North American
14 Energy Reliability Council (NERC) resulted in "write ups" and development of
15 action plans to address the violations. In the EPAAct 2005, the US Congress
16 granted broad responsibilities and enforcement authority to FERC for adherence
17 to reliability requirements. The EPAAct 2005 also made compliance with national
18 and regional reliability standards (such as those imposed by NERC and its
19 regional reliability organizations) mandatory. The EPAAct 2005 granted FERC
20 oversight and enforcement authority over reliability requirements and granted
21 FERC the authority to select a national reliability organization. FERC recently
22 designated NERC as that organization, and FERC is in the process of reviewing
23 NERC's reliability standards. As part of FERC's enforcement authority, FERC
24 has the authority to impose potentially severe financial penalties for non-
25 compliance with reliability standards. Thus, constraints that were not identified in
26 Vectren South's internal system modeling and never relevant to the Vectren
27 South transmission system as it was designed and operated prior to 1996, now
28 pose serious reliability risks and related financial risks to Vectren South.

29
30 **Q. Does Vectren South expect these risks to moderate as the Midwest ISO**
31 **system takes on additional centralized operational authority over the**
32 **Vectren South transmission system?**

1 A. No. To the contrary, as Vectren South's internal load continues to grow, and
2 future lower cost generation outside the Vectren South transmission system is
3 constructed, Vectren South anticipates that it will have an increased reliance on
4 transmission import capability. Both Midwest ISO and Vectren planning models
5 indicate that Vectren South has only approximately 360 megawatts of physical
6 import capability, and none of that import capability can be classified as firm
7 import capability. Moreover, as part of the Midwest ISO's overall responsibility
8 for the transmission system within the Midwest ISO footprint, Midwest ISO
9 maintains authority to either approve or disapprove proposed new generation,
10 and Midwest ISO can require the construction of additional transmission facilities
11 as a pre-condition to approval of proposed new generation. Vectren South is
12 currently engaged in that Midwest ISO review process as Vectren South
13 considers its role in the Duke Edwardsport IGCC project.

14
15 **Q. What do import constraints mean for Vectren South's customers?**

16 A. Import capability refers to the amount of power that can be brought into a system,
17 such as Vectren South, over its transmission lines. To the extent that Vectren
18 South has no firm import capability, Vectren South's ability to reliably import
19 power generated outside its system is limited. Long-distance power transfers,
20 external system constraints, and increased emphasis on reliability standards, are
21 among the factors that combine to make Vectren South's system import-
22 constrained. Import constraints become especially important to customers in
23 those situations where internal generation cannot meet internal demand. Those
24 situations might include circumstances in which internal generation is not
25 available due to equipment failure, scheduled maintenance, or dispatch orders
26 from Midwest ISO to the Vectren South generators to reduce output in response
27 to overall system needs across the Midwest ISO. As a member of the Midwest
28 ISO, Vectren South takes its dispatch orders for its generation directly from
29 Midwest ISO. If less expensive or less constrained generation is available from
30 another service area, Midwest ISO has the authority to reduce Vectren South's
31 internal generation. In those situations, Vectren South's import constraints can
32 directly affect Vectren South's ability to bring power in to meet customers'
33 demand. In the past, those kinds of situations have resulted in Vectren South's

1 interruption of service to certain industrial customers (per the terms of
2 agreements for interruptible power that Vectren South has in place with those
3 customers) as well as Vectren South's use of its direct load control to cycle off
4 the hot water heaters and air conditioners of retail and small commercial
5 customers who participate in that program.
6

7 **Q. Has Vectren South done anything to address such constraints?**

8 **A.** Yes. Vectren South has planned and constructed several transmission facilities
9 to alleviate particularly difficult constraints and to make short-term improvements
10 to system reliability. For example, Vectren South's construction of the Duff
11 345/138 kV interconnection with Duke Energy, and its new Victory 161/69 kV
12 interconnection with Hoosier Energy are such projects. Others include capacitor
13 bank additions, and a reactor installed at our A. B. Brown station which are
14 designed to limit flows on a neighboring utilities' facilities. However, even as
15 those constraints are identified and projects to address them are designed and
16 built, more constraints continue to arise as other market participants seek to
17 move power across Vectren South's transmission lines.
18

19 **Q. What additional steps can Vectren South take to address this problem?**

20 **A.** In addition to these several short term projects, Vectren South conducts on-going
21 assessments of its transmission system and forecasts of facilities necessary to
22 meet customer needs, longer term. These long term forecasts set out both the
23 anticipated system needs (as well as needs external to the system but still
24 necessary for internal reliability) and projects to address all of those needs. The
25 most recent forecast was highlighted in the transmission chapter of Vectren
26 South's most recent Integrated Resource Plan (IRP) submitted to the
27 Commission. As part of Vectren South's overall strategy to address these
28 problems, Vectren South can construct additional transmission facilities (as noted
29 in the IRP and Vectren South's long term transmission planning) to enable
30 Vectren South to alleviate these import constraints and reliably serve its load.
31 Vectren South remains mindful that these are constantly moving targets –
32 customer demand and regional use of the transmission system are not static,
33 and, for that reason, these forecasts take into consideration both demand and

1 regional use, with the understanding that new constraints arise even as known
2 constraints are addressed. In this dynamic environment, Vectren South's
3 assessments are on-going and proposed projects are designed to not merely
4 meet current needs, but, to the extent possible, to anticipate future needs as well.
5

6 **Q. Has Vectren South identified specific projects to address known concerns?**

7 A. Yes. As part of Vectren South's on-going study of its import constraints, Vectren
8 South has identified several projects that will alleviate known import constraints,
9 increase import capability and address overall reliability concerns. These
10 projects, with the expected dates of completion, the benefits gained, and the
11 approximate cost of each project are discussed in detail below.
12

13 **Proposed Transmission Projects**
14

15 **Q. Transmission projects such as these usually take considerable planning**
16 **and time for design. Does Vectren South have any projects planned for the**
17 **next two years?**

18 A. Yes. Two projects are planned during the 2006-07 time period: Vectren South's
19 planning and design work is in process for a 345/138 kV substation to be
20 constructed near Francisco Indiana in 2006-07, and for a 138 kV transmission
21 line to connect Vectren South's existing Dubois and Duff substations. These two
22 projects will provide approximately 95 additional megawatts of physical import
23 capability for Vectren South, at an approximate construction cost of \$30 million,
24 based on a conceptual cost estimate.
25

26 **Q. Are there any other projects planned for the near-term?**

27 A. Yes, Vectren South also plans a 138/69 kV substation, one 345/138 kV
28 substation, two 345 kV lines and two 138 kV lines and line exits to be constructed
29 between 2006 and 2009. The 138/69 kV substation will be constructed at a new
30 site in Evansville. The 345 kV substation will be constructed in Vectren South's
31 existing Culley Station in Newburgh, Indiana. One 345 kV line will connect
32 Vectren South's Duff substation to Vectren South's Culley substation, and one

1 345 kV line will connect Vectren South's Culley substation to Owensboro
2 Municipal's Smith substation.
3

4 **Q. How do these projects address the import constraints described above?**

5 A. These projects, collectively, with all other conditions remaining unchanged, will
6 provide more than approximately 545 additional megawatts of physical import
7 capability at an approximate construction cost of \$85 million, based on a
8 conceptual cost estimate.
9

10 **Q. Has Vectren South planned longer-term additions to its transmission**
11 **system, as well?**

12 A. Yes. Vectren South anticipates steady growth in its territory's demand for power,
13 and for that reason has additional transmission projects, designed to provide
14 additional import capability, in the longer term. That longer-term planning
15 provides for additional projects extending out to 2011, and includes two 345 kV
16 transmission lines and one 345/138 kV substation. One of the 345 kV lines will
17 connect Vectren's Francisco substation to Vectren South's A B Brown station,
18 and one 345 kV line will connect Vectren South's A B Brown station to Big Rivers
19 Electric's Reid Station at an approximate construction cost for these three 345 kV
20 transmission projects of approximately \$73 million. These three projects, in
21 combination with the previously described projects, will result in an approximate
22 total physical import capability of greater than 1000 megawatts, including
23 approximately 629 megawatts of firm import capability. These projects are
24 designed taking into account the fact that others within the Midwest ISO and
25 outside the Midwest ISO will continue to have access to Vectren South's
26 transmission facilities, under FERC's open access orders. Vectren South
27 anticipates no reduction in the current open access requirements, and, in fact, as
28 the Midwest ISO's ancillary market(s) develop over the next several months,
29 further demand on all transmission facilities within the Midwest ISO footprint can
30 be expected.
31

32 **Q. How are these proposed investments treated in the Vectren South electric**
33 **rate base?**

1 A. They are not included in the Vectren South electric rate base in this case
2 because they are prospective in nature.
3

4 **DESCRIPTION OF THE VECTREN SOUTH'S ELECTRIC DELIVERY SYSTEM**
5

6 **Q. Are you familiar with Vectren South's electric delivery system?**

7 A. Yes, I am familiar with Vectren South's electric delivery system consisting of the
8 electric lines, substations, towers, poles, and associated equipment and facilities
9 that deliver electricity from a generating station or another transmission system to
10 an ultimate customer or another transmission system.
11

12 **Q. Please describe Vectren South's electric delivery system.**

13 A. As of October 31, 2006, Vectren South's electric delivery system will include
14 approximately 320 circuit miles of 138 kV lines, and 550 circuit miles of 69 kV
15 lines and 4,190 miles of primary distribution circuits 12.5 kV and below. Vectren
16 South's electric delivery system is directly connected to five (5) control areas:
17 the control areas of Hoosier Energy Rural Electric Cooperative ("HED"), Duke
18 Energy "DE", E.ON.U.S., "E.ON", Big Rivers Electric Cooperative ("BREC"), and
19 Indianapolis Power and Light ("IPL"). The total number of individual Vectren
20 South interconnections with these five control areas is eleven (11).
21

22 Vectren South's 138 kV electric delivery system facilities are referred to as
23 "Transmission Facilities" and Vectren South's 69 kV electric delivery system
24 facilities are referred to as "Sub-transmission Facilities". The "Transmission
25 Facilities" are used primarily to transfer power from generating stations to major
26 area load centers and are responsive to power transfers into, out of and across
27 Vectren South's electric system. The "Transmission Facilities" are normally
28 operated primarily in a network configuration. The "Sub-transmission Facilities"
29 are used primarily to move power within a major load center to either retail
30 distribution substations or wholesale delivery points. The "Sub-transmission
31 Facilities" are operated primarily in a network configuration and are largely
32 operated in parallel with the "Transmission Facilities". Because the "Sub-
33 transmission Facilities" are operated, for the most part, in parallel with the

1 "Transmission Facilities", they do respond to transfers across Vectren South's
2 electric system. The "Sub-transmission Facilities" also provide contingency
3 support for the "Transmission Facilities".
4

5 **Q. Prior to Vectren South's implementation of the FERC seven-factor test in**
6 **this proceeding, has Vectren South classified its electric delivery system**
7 **facilities as transmission facilities or distribution facilities?**

8 A. To date, Vectren South has classified all of its 69 kV and above electric delivery
9 system facilities, whether radial or networked, as transmission facilities, and has
10 classified all of its electric delivery system facilities below 69 kV as distribution
11 facilities.
12

13 **VECTREN SOUTH'S APPLICATION OF THE FERC SEVEN-FACTOR TEST**
14

15 **Q. Are you familiar with the FERC Seven-Factor Test?**

16 A. Yes, I am. I supervised the study and the development of guidelines that applied
17 the FERC Seven-Factor Test to determine the proper classification of Vectren
18 South's electric delivery system facilities.
19

20 **Q. Did Vectren South follow the FERC Seven-Factor Test to determine the**
21 **classification of its transmission and distribution facilities?**

22 A. Yes, it did. The application of the FERC Seven-Factor Test resulted in the
23 determination that all of Vectren South's electric delivery system facilities rated
24 69 kV and above, networked or radial, should be classified as transmission, and
25 that all of Vectren South's electric delivery system facilities rated below 69 kV
26 should be classified as distribution. Each component of the FERC Seven-Factor
27 Test, as applied to Vectren South's electric delivery system, is discussed below.

- 28 1. Factor 1: Local distribution facilities are normally in close proximity to
29 retail customers.

30 Most Vectren South retail electric customers are served by circuits with
31 voltages below 69 kV. Normally, the voltage is stepped down to 12.5 kV
32 and below, and these circuits are then routed, in some cases for several
33 miles, from the 69 kV and above substations to individual retail

1 customers. Due to the size of structures and right-of-way requirements, it
2 is not practical to route 69 kV and above circuits to each individual retail
3 customer. The 69 kV and above circuits, therefore, are normally not in
4 close proximity to retail customers. Based upon this factor of the FERC
5 Seven-Factor Test, Vectren South classified its 69 kV and above electric
6 delivery system facilities as transmission, and its electric delivery system
7 facilities rated 12.5 kV and below as distribution.

8 2. Factor 2: Local distribution facilities are primarily radial in character.

9 Vectren South's "Transmission Facilities", (consisting of 138 kV facilities)
10 and Vectren South's "Sub-transmission Facilities" (consisting of 69 kV
11 facilities) are operated primarily in a networked configuration. While
12 some of Vectren South's 138 kV and 69 kV circuits were built initially as
13 radial circuits, they should nevertheless be classified as transmission
14 under this factor because they have the capability to be later looped into
15 the networked transmission system by constructing additional facilities. In
16 many cases, these facilities were designed with higher ratings than the
17 initial radial load requirement because Vectren South anticipated that
18 these facilities would be looped into the networked system, thus imposing
19 higher ratings requirements. Examples of Vectren South circuits which
20 were converted from radial transmission supply to looped supply are the
21 following: (i) the Oak Grove 69-12.47 kV substation was converted to
22 looped supply by constructing approximately two miles of 69 kV circuit;
23 and (ii) the 69 kV radial circuit supply to Buckwood 69-12.47 kV
24 substation was converted to looped supply by constructing approximately
25 two miles of 69 kV circuit. Examples of Vectren South substations
26 presently supplied by a radial circuit but planned to be converted to
27 looped supply are the following: (i) Sunbeam 69-12.47 kV substation
28 which will be converted to looped supply in the near future by constructing
29 approximately two miles of 69 kV circuit, and (ii) the Mohr Rd and St
30 Wendell 69-12.47 kV substations will both be converted to looped supply
31 by constructing approximately three miles of 69 kV circuit between the
32 two substations. All of Vectren South's 138 kV system is constructed in a
33 network configuration. Approximately 97 % of Vectren South's 69 kV

1 system is constructed in a network configuration. Nearly all of Vectren
2 South's 12.5 kV and below system is operated in a radial configuration.
3 Based upon this factor, Vectren South's radial and networked 69 kV and
4 above electric delivery system facilities should be classified as
5 transmission and Vectren South's 12.5 kV and below electric delivery
6 system facilities should be classified as distribution.

7 3. Factor 3: Power flows into local distribution systems: it rarely, if ever,
8 flows out.

9 Due to the primarily networked configuration of the 69 kV and above
10 system, power flows in and out depending on: (i) transfers occurring into,
11 out of and across the Vectren South system; (ii) load requirements; and
12 (iii) system outages. However, for systems below 69 kV (which are
13 operated in primarily a radial configuration), power routinely flows into
14 these systems for load requirements only and rarely, if ever, flows out.
15 Based upon this factor, Vectren South's 69 kV and above electric delivery
16 system facilities should be classified as transmission, and Vectren
17 South's 12.5 kV and below electric delivery system facilities should be
18 classified as distribution.

19 4. Factor 4: When power enters a local distribution system, it is not
20 reconsigned or transported on to some other market.

21 Because Vectren South's 69 kV and above systems are operated
22 primarily in a networked configuration and are responsive to transfers
23 into, out of and across the Vectren South system, power flows across
24 these systems frequently consist of wholesale transactions which are
25 transported to other markets. Vectren South's interconnections with
26 neighboring utilities are also used in the reconsignment or transporting of
27 power to other markets. Most of Vectren South's interconnections with
28 neighboring utilities are at voltages above 69 kV. Vectren South has five
29 (5) interconnections with neighboring utilities at 69 kV. Because of
30 geography and the nature of the Vectren South system, Vectren South
31 could make additional interconnections with neighboring utilities at 69 kV.
32 Vectren South does not have any interconnections with neighboring
33 utilities at voltages below 69 kV. Power that flows into the 12.5 kV and

below systems is primarily consumed by retail consumers. Vectren South serves no wholesale customers from Vectren South owned 12.5 kV and below facilities. Based upon this factor, Vectren South's 69 kV and above electric delivery system facilities should be classified as transmission, and Vectren South's 12.5 kV and below electric delivery system facilities should be classified as distribution.

5. Factor 5: Power entering a local distribution system is consumed in a comparatively restricted geographical area.

The Vectren South's "Transmission Facilities" (consisting of 138 kV facilities) are used primarily to transfer power from generating stations to major load centers and are responsive to power transfers into, out of and across the Vectren South system. Vectren South's "Sub-transmission Facilities" (consisting of 69 kV facilities) are used primarily to move power within major load centers to either retail distribution substations or wholesale delivery points, but they still are responsive to power transfers because the "Sub-transmission Facilities" are operated primarily in a network configuration and in parallel with the "Transmission Facilities". The "Transmission Facilities" and "Sub-transmission Facilities" are located extensively throughout the Vectren South service territory. Power flowing into the 12.5 kV and below systems is consumed in comparatively restricted geographic areas. Based upon this factor, Vectren South's 69 kV and above electric delivery system facilities should be classified as transmission, and Vectren South's 12.5 kV and below electric delivery system facilities should be classified as distribution.

6. Factor 6: Meters are based at the transmission/local distribution interface to measure flows into the local distribution system.

Vectren South has ammeters at all of its substations where the voltage is stepped down from transmission level (i.e., 69 kV and above) to distribution voltage (i.e., 12.5 kV and below). This constitutes the transmission/distribution interface. Power flows can be measured from the transmission system to the distribution system. Meters for retail customers are generally located on the 12.5 kV and below electric delivery system facilities. Based upon this factor, Vectren South's 69 kV

and above electric delivery system facilities should be classified as transmission, and Vectren South's 12.5 kV and below electric delivery system facilities should be classified as distribution.

7. Factor 7: Local distribution systems will be of reduced voltage.

Because very few Vectren South retail customers (only 11, less than 0.01%) are served directly from the 69 kV and above electric delivery system facilities, voltage transformation is normally required to serve retail customers. In fact, there could be, and often are, several additional transformations of voltage between the 69 kV facilities and the retail customer. Based upon this factor, Vectren South's 69 kV and above electric delivery system facilities should be classified as transmission, and Vectren South's 12.5 kV and below electric delivery system facilities should be classified as distribution.

Q. Do you have an opinion regarding how Vectren South's electric delivery system facilities should be classified between transmission and distribution under the FERC Seven-Factor Test?

A. Yes. In my opinion, Vectren South's "Transmission Facilities" (consisting of 138 kV facilities) and Vectren South's "Sub-transmission Facilities" (consisting of 69 kV facilities) should be classified as transmission according to the FERC Seven-Factor Test, and Vectren South's electric delivery system facilities rated 12.5 kV and below should be classified as distribution under the FERC Seven-Factor Test.

VECTREN SOUTH'S PROPOSED SEVEN-FACTOR TEST CLASSIFICATIONS

Q. How are Vectren South's electric delivery system facilities classified under the FERC's Uniform System of Accounts ("USofA"), 18 CFR part 101, adopted by the IURC at 170 IAC 4-2-1.1?

A. All of Vectren South's 69 kV and above electric delivery system facilities are currently classified as transmission facilities under the USofA.

1 **Q. Does Vectren South have any electric delivery system facilities below 69 kV**
2 **that are currently classified as transmission facilities under the USofA?**

3 A. No, it does not.
4

5 **Q. Please explain how Vectren South proposes to handle the classification of**
6 **the interface between transmission facilities and distribution facilities.**

7 A. Referring to the classification guidelines set forth in Petitioner's Exhibit MWC-2,
8 the substation equipment used to serve distribution facilities would be classified
9 as distribution. Even in the case of a retail customer taking service from Vectren
10 South directly at transmission voltage, there may still be distribution facilities
11 connecting that customer to the Vectren South. Some examples of this
12 treatment are the following:

13 (i) The Dale Substation – This substation is fed with one 69KV radial line
14 which has the capability to be extended beyond the Dale Substation and
15 operated in a network configuration in the future. This line is classified a
16 transmission, but the substation is classified as distribution.

17 (ii) The Farm Bureau Substation – This substation is fed by two 138KV
18 lines, looped in and out of the station, that are part of the 138KV
19 network. The 138KV lines are classified as transmission but the
20 substation is classified as distribution.

21 (iii) The Smythe Substation – This substation acts as connection point for
22 three 69KV lines as well as serving distribution load. The lines are
23 classified as transmission. The substation is also classified as
24 transmission since it acts as a transmission switching station for the 69KV
25 network. The 69KV/12.5KV transformers and all 12.5KV equipment in the
26 substation are classified as distribution.
27

28 **APPLICATION OF FERC SEVEN-FACTOR TEST RESULTS**
29

30 **Q. Has Vectren South applied the FERC Seven-Factor Test to its asset to**
31 **determine the proper classification between transmission and distribution?**

32 A. Yes. The seven factors were applied to the following USofA:
33 Account 350.1 (Land and Property Rights)

1 Account 353 (Transmission Substations)
2 Account 334 (Transmission Towers and Fixtures)
3 Account 355 (Transmission Poles and Fixtures)
4 Account 356 (Transmission Overhead Conductors and Devices)
5 Account 357 (Transmission Underground Conduit)
6 Account 358 (Transmission Underground Conductors and Devices)
7 Account 362 (Distribution Substation)
8

9 **Q. What were the results of applying the FERC Seven-Factor Test?**

10 A. Based on the seven tests it was determined that eight metering stations for retail
11 load should be reclassified from transmission to distribution and three distribution
12 stations should be reclassified from distribution plant to transmission plant.
13 These three stations act as switching stations for three or more transmission
14 lines. The 69/12.5KV transformers and all 12.5 KV equipment in these three
15 stations remain classified as distribution. The stations to be reclassified as
16 transmission are Folz Road, Oak Grove and Smythe.

17
18 It was also determined that two metering stations (Broadway No.1 and Broadway
19 No. 2) associated with generation should be reclassified from transmission plant
20 to generation plant.

21
22 Within the transmission substations, it was determined that some transformers
23 should be transferred to distribution or generation based on the classification
24 criteria.

25
26 The approximate amount of the book balance of the transfer from Transmission
27 to Distribution is \$2.8 million. The approximate value from Transmission to
28 Generation is \$2 million. The approximate value from Distribution to
29 Transmission is \$2 million. A detailed list of reclassification for substation
30 equipment is contained in Petitioner's Exhibit No. MWC-3, also known as
31 Attachment A in the Vectren 7 Factor Report hereto.

1 **Q. Were Petitioner's Exhibit No. MWC-2 and Petitioner's Exhibit No. MWC-3**
2 **prepared by you or under your supervision?**

3 **A. Yes, they were.**
4

5 **Q Does that conclude your prepared direct testimony?**

6 **A. Yes, at this time.**

Report on Review of Vectren Property Records for 7 Factor Test 8/17/2006

Performed by Dan Becher
The Prime Group LLC

Background and Basis for Review

The Prime Group was requested to review the transmission system of Vectren and its property records and recommend the proper classification of facilities under the FERC seven Factor Test as described in FERC Order 888. This review is required under the Midwest ISO Agreement (Section (II), Paragraph (C), Subparagraph (2)). The seven factors for classifying facilities as either transmission or distribution under FERC Order 888 are as follows:

- Factor 1: Local distribution facilities are normally in close proximity to retail customers.
- Factor 2: Local distribution facilities are primarily radial in character.
- Factor 3: Power flows into a local distribution system: it rarely, if ever flows out.
- Factor 4: When power enters a local distribution system, it is not reconsigned or transported on to some other market.
- Factor 5: Power entering a local distribution system is consumed in a comparatively restricted geographic area.
- Factor 6: Meters are based at the transmission/local distribution interface to measure flows into the local distribution system.
- Factor 7: Local distribution systems will be of reduced voltage.

FERC left it to state commissions to interpret the application of the seven Factors in classifying facilities between distribution and transmission. On March 28, 2003, Cinergy PSI filed testimony with the Indiana Utility Regulatory Commission (IURC) regarding the criteria for applying the seven Factor test to Cinergy PSI's system as part of a state rate

case. Since the IURC accepted Cinergy PSI's criteria for classification, it was decided to use the same criteria for classifying Vectren's facilities.

Cinergy PSI classified all lines 69 KV and above as transmission. They justified this based on the response of 69KV to loop flows from interconnections with neighboring utilities. They also used as a justification the number of interconnections to other utilities' systems and wholesale loads connected at 69KV. They did not exclude radial lines based on the logic that many radial lines are eventually extended and become part of the transmission network. As noted above, this approach for distinguishing between transmission and distribution plant was approved by the IURC.

Vectren's 69 and 138 KV systems are similar to Cinergy PSI in that they carry loop flow that is caused by neighboring utilities, serve wholesale loads and provide an interconnection to neighboring systems. Vectren has 5 interconnections with neighboring utilities at 69 KV, 4 interconnections at 138 KV, 1 interconnection at 161KV and 1 interconnection at 345 KV. There are 12 wholesale loads served at 69KV on the Vectren transmission system. The similarity between Vectren's 69 KV system and Cinergy PSI's system serves as justification for using similar criteria as that approved by the IURC in Cinergy PSI's case. In fact, the case can be made, that, since Vectren does not have an internal transmission system above 138KV, Vectren's 69KV system serves a more significant transmission role than Cinergy PSI's.

The criteria, based on the Cinergy PSI case, used for classifying facilities as transmission in this review are as follows:

- All lines 69KV and above will be classified as transmission.
- All substations with transformation from one transmission voltage to another will be classified as transmission substations.
- All substations connecting three or more transmission lines, or an interconnection with another utility will be classified as transmission substations.
- All common equipment, facilities and property associated with a transmission substation will be classified as transmission plant.

- Transformers in transmission substations with only one transmission level winding and one or more distribution level windings will be considered distribution plant along with associated breakers and equipment.
- Substations that would normally be considered distribution but which only serve wholesale loads will be considered transmission.

A criteria not associated with the seven Factor test is that generator step up transformers will be classified as generation plant. This is based on FERC decisions on proper classification of generator step up transformers.

Review Process

The following FERC Property Accounts were reviewed for proper classification under the criteria presented above:

Account 350.1 (Land and Property Rights)
Account 353 (Transmission Substations)
Account 354 (Transmission Towers and Fixtures)
Account 355 (Transmission Poles and Fixtures)
Account 356 (Transmission Overhead Conductors and Devices)
Account 357 (Transmission Underground Conduit)
Account 358 (Transmission Underground Conductors and Devices)
Account 362 (Distribution Substation)

To determine the proper classification for substation equipment, a single line system diagram of Vectren's transmission system was used to apply the above criteria. The Prime Group was provided an electronic copy of the FERC accounts listed above to review for proper classification.

For Transmission Line Accounts, where entries did not identify individual lines, six Work Orders were sampled to test if the line equipment was properly classified, which proved to be the case. If any of the sampled work orders resulted in improper classification, additional work orders would have been sampled.

Summary of Results

Based on the criteria, it was determined that eight metering stations for retail load should be reclassified from transmission plant to distribution plant and three distribution stations (Folz Road, Oak Grove and Smythe) should be reclassified from distribution plant to transmission plant. It was also determined that two metering stations associated with generation (Broadway #1 and #2) should be reclassified from transmission plant to generation plant.

Within the transmission substations, it was determined that some transformers should be transferred to distribution or generation based on the classification criteria.

The approximate amount of the booked balance of the transfer from Transmission to Distribution is \$2.8 million. The approximate value from Transmission to Generation is \$2 million. And the approximate value from Distribution to Transmission is \$2 million. A detailed list of reclassification for substation equipment is contained in Attachment A.

The entries in accounts for lines (354, 355, 356, 357 and 358) are not broken down by individual lines and only indicate voltage levels. This is adequate, since all lines 69KV and above are being classified as transmission under the criteria. Each entry does reference a work order that contains more information on the line involved. As part of the review, a small sample of work orders were reviewed to assure that the voltage level of the line involved was as listed in the entry. A listing of the work orders sampled is contained in Attachment B.

Summary of Transfers for Vectren South Electric Substation Property
7 Factor Test Reclassification

Description	Plant in Service				Accumulated Provision for Depreciation			
	Transfer From		Transfer To		Transfer From		Transfer To	
	Acct.	Amount	Acct.	Amount	Acct.	Amount	Acct.	Amount
Transmission Stations reclassified to Generation	353	662,742.52	345	662,742.52	353	(449,407.02)	345	(449,407.02)
Transmission Equipment reclassified as Generation	353	1,369,752.24	315	1,132,032.37	353	(889,978.79)	315	(714,930.97)
			345	237,719.87			345	(175,047.82)
Transmission Stations reclassified as Distribution	353	1,619,573.64	362	1,619,573.64	353	(504,969.68)	362	(504,969.68)
(Retail Metering Stations)	350	637.64	360	637.64				
Transmission Equipment reclassified as Distribution	353	1,196,838.57	362	1,196,838.57	353	(739,345.23)	362	(739,345.23)
(Distribution Transformers in Transmission Stations)								
Distribution Stations reclassified as Transmission	361	8,714.33	352	8,714.33	361	(6,170.93)	352	(6,170.93)
(Excluding Distribution Transformers & Switchgear	362	2,005,498.88	353	2,005,498.88	362	(479,710.39)	353	(479,710.39)
	360	10,688.35	350	10,688.35				
		6,874,446.17		6,874,446.17		(3,069,582.04)		(3,069,582.04)